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## ORIGINAL LECTURES.

### VERSIONS AND FLEXIONS OF THE UNIMPREGNATED UTERUS.

*A Course of Lectures delivered before the Boerhaavian Society.*

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#### LECTURE VI.

#### TREATMENT.

THE best evidence that any disease is difficult and uncertain in its treatment is the multiplicity of remedies that is suggested for its relief. The treatment of these forms of uterine displacements illustrates this. From the therapy of versions and flexions another conclusion may be drawn even more far-reaching: that by reason of these difficulties and uncertainties, and the contradictory agencies that are often equally potent to afford relief, there has grown up the powerful faction that proclaims the opinion that versions and flexions are without symptoms and do not require treatment. Take gynecology as it is usually practised and understood, and it is impossible to persuade a man who has straightened a flexed uterus only to find that all the symptoms persist unabated, that any of the symptoms were due to the distortion.

One measure of treatment nearly all gynecologists are united upon, be they mechanical or not in their notions of uterine pathology. This is the thorough treatment of inflammation both of the uterus and its near surroundings. In former lectures you could not fail to notice the important part this process played both in its etiological relations and pathological outcome. In making a vaginal examination in case of one or the other of these displacements two local conditions stand out in bold relief, objectively, the uterine deviation, and, subjectively, the exquisite tenderness of the organ. In recent cases so marked is the latter that we can do nothing unless we first overcome the uterine hyperæmia and tenderness. Dr. Routh gives an important place among others to this end, to local depletion. Scarification, in my experience, serves to meet this indication better than any other means I have tried. A few punctures a quarter of an inch deep in the vaginal portion bleed very freely, and nearly always stop as soon as the speculum is withdrawn. If the patient is not æmemic, this may be repeated several times at intervals of four or five days. Routh follows by blisters over the pubic region and glycerine dressings. A more potent agent is vaginal irrigation. Its value depends not so much upon the quantity of water used as upon the length of time the parts are exposed to the action of the current. It is not an unusual thing to have patients tell you that they have been using a pint or a quart of warm water, and always coupled with it the remark that they either felt worse after it, or it never made them any better. This

quantity of water simply added to the local engorgement instead of relieving it. You may get a very perfect illustration of the effect of vaginal irrigation by the washer-woman's hand. When she first places her hands in the hot water the skin becomes reddened and the veins are engorged. She continues at her work and this stage gradually merges into another,—the skin becomes pale, and the veins contract. In half an hour or so this secondary stage is completed and the skin is pale and wrinkled. The technical term of the wash-tub is parboiled. Now it is this secondary effect of the hot water, without the parboiled stage, that we desire to reach in vaginal irrigation. After providing my patient with a suitable apparatus, I tell her she is to use it twenty, thirty, or forty minutes as, in my opinion, she needs it or is able to bear it. A thermometer should always comprise a part of the apparatus, and to prevent breakage the tin case of the instrument may be soldered to the inside of a five gallon galvanized iron pail from which the water may be taken with either a siphon or by a hose connected with the lower edge. A temperature of from 100° to 110° may be used. I always give a margin of a few degrees in ordering the temperature, otherwise you will find your patient, if she is particular in following your instructions, experimenting with her hot and cold water in a vain attempt to reach the exact temperature. You cannot make this method too easy and comfortable for her, as I have very often found it difficult to keep patients up to efficient work with the vaginal irrigator, except under the discipline of a nurse.

To reach the same end, leeches have been applied to the groin and pudenda, emollients baths, lavements, and fomentations, and according to nearly all of the popular school, this must be done before any attempt is made to treat the displacement (Hall, Meadows, Tilt, Boivin and Duges, Bennett). "It is by no means illogical to treat the epiphrenomena, the consequences of a disease, first. It was the grossest of fallacies to disregard these and to limit our attention to the presumed cause" (Barnes). On the contrary, the unpopular school tells you, that "to treat the inflammation of the uterus, without correcting the fault of position, appears as illogical as to apply a cooling lotion to a dislocated shoulder-joint" (Hewitt).

Now, these opposing statements cannot both be true, but since I have become familiar with the literature of versions and flexions, it has become clear to me that very often these observers with their diverse conclusions were usually writing about very different things. In proof of this, let me give you an extract from J. H. Bennett. He is talking about anteflexions of the uterus as long ago as 1857. What he calls "normal anteflexion does not need treatment except what might be necessary to relieve the congestion of the organ." You will search in vain in the writings of a mechanical pathologist for a parallel expression regarding a flexion. Common sense will tell you that a "normal" anteflexion does not need treatment, and the same faculty will be a safe guide as

to whether you are to stop and readjust the circulation of the engorged pelvic organs before you correct a faulty position. Therapeutics, within a field so narrow even as the female pelvis, is too wide in its dominion to be brought within the limits of hard and fast rules.

There is one group of these displacements, usually a beginning flexion, that may be discovered at about the conclusion of the puerperal state, in which the treatment just detailed will be found of great value. Massmann says, that this form, under early treatment, is one of the most curable of displacements. Its symptoms were described in the third lecture in the table compiled from E. Martin, and should be suspected in every instance in which the mother is unable to nurse her child. Frequent doses of a dilute solution of hydrochlorate of ammonium, owing to its peculiar power to resolve acute hyperplasias, will also aid materially.

In old-standing versions and flexions chronicity is the chief obstacle in the way of treatment. Few patients have the courage, and but few, therefore, meet with the reward, that results from the months, and in some cases the years, of treatment necessary to effect a cure. Some writers take the ground that curability is not a trait of many forms of flexions (Mundé). In these cases depletion is usually not to be thought of. In fact, we need greater energy of pelvic circulation in order to restore the balance of systemic nutrition. Iron, arsenic, quinine, with baths and liberal diet. The pain is usually neuralgic, or it may be of an inflammatory character but rarely, and require antiphlogistic treatment (A. R. Simpson). Physicians frequently tell their patients that if they can become pregnant and successfully reach term that their displacement will be cured. It is based upon good reasoning as well as upon good authority (Hewitt, Beattie, Ashwell); but if it were said rather, that a successful delivery put the distorted uterus into a condition to be cured, it would be a better way to express it. The case of old standing takes on the form of a recent flexion just spoken of, and all the precautions and treatment then mentioned become urgently demanded. If too much reliance were placed upon the curative power of pregnancy the organ would return to its former distortion.

Some authors make prominent mention of the sound as a means of uterine reposition, as well as of diagnosis. I cannot help regarding it as a dangerous instrument for either purpose. It has a fatal facility of use that leads to its employment in cases entirely unfit. There is an instrument invented by Sims, and "improved" by several people since, called the uterine repositor, that I regard as specially dangerous. The uterus is pried out of its malposition by machinery that robs the trained touch of its delicacy and in the hands of one unfamiliar with pelvic manipulations must be exceedingly dangerous. Very few gynecologists use it, but it is, unfortunately, in extensive use. Some gynecologists treat the flexed uterus by the daily, or frequent use of the sound, thus straightening the organ, sometimes supporting it directly after by plugs of cotton. Some good can no doubt be accomplished in this way, but it is excessively tedious and expensive to the patient. I have never employed it for this purpose except to prepare the uterine cavity for the intrauterine stem (Dumley, Earle, Rasch, Baker Brown).

Some years ago we heard much of the good effects

of dilatation of the cervix in flexions. Various methods have been employed. Sponge, sea-tangle, and tupelo tents are the simplest means, and must for the time straighten the organ, provided the seat of the flexion is not too high. Moir followed the use of the tent by wire bougies covered with gutta-percha and gradually reduced in size, hoping by this means to induce the uterus to contract into normal form. Simpson invented bulb-ended graduated metallic dilators to be worn for a time by the patient. Braithwaite uses the sponge tent, which, after full dilatation, is followed by the introduction of a Hodge pessary. The most complete expression of the opinions of experts upon this method is found in the debate on the paper of the last-named author in the London Obstetrical Society, in 1879, in which a majority of those who took part in the discussion either ignored or were opposed to it.

For dilators, other than tents, results have been claimed. Hanks has invented a set of dilators of very faulty construction, as they are sharp instead of probe-pointed, by which he states that he has been able to relieve the dysmenorrhœa of flexions. I have tried them, and have secured only the most transient results. That a permanent cure could be gained in this way appears hardly probable, when we reflect how rapidly the effect of dilatation, that does not cause rupture of the tissue of the cervix, passes away. One effect of passing these uterine bougies or dilators I can understand would result from their use. This would be to allay a hypersensitive condition of the cervical canal, just as a similar condition of the urethra is relieved by passing moderately dilating sounds. I have observed that the passage of a dilator that produces moderate distention of the cervical canal a day or so before, or even during menstruation, will relieve this form of dysmenorrhœa; but the ensuing month the patient will suffer as much as ever unless the operation is repeated. As a careful examination of the cervical canal and os externum directly after the use of the dilator gave no appearance of dilatation, I came to the conclusion that the increase in size of the canal played but a small part, if any, in gaining this measure of transient relief. I could compare it to nothing except the use of the sound in the hypersensitive urethra. Concerning the use of tents or dilators as a preliminary to the introduction of the intrauterine sound, it will be better to reserve what is necessary to say to the final lecture on that instrument.

Another method closely allied to the last, in some respects, is division of the cervix uteri. This was practised for two purposes: First, to straighten the distorted canal; and, secondly, for the purpose of enlarging it. The first is the method of Sims and Emmet, and has, I believe, run its career of doubtful utility. We may call it a method of curing flexions without removing the disease. I have done the operation a few times only, but I never saw any good results follow. It is a formidable operation, and is not free from danger. I refer to it here for its historical importance. A modification of this method, devised by Peaseley, answers the second purpose of the operation, which, instead of a complete division, consists in making a slight incision the whole length of the canal and increasing its lumen. Peaseley severely criticises the operation of Sims; and, as I believe, very justly. If division of the cervical canal is ever necessary, the method last named appears to accomplish the

purpose. From the rarity of any mention of either of these operations in recent literature, I believe that they are seldom resorted to. It was very popular at one time under the leadership of Simpson, Baker Brown, and Sims, when the hysterotomy was considered as necessary a part of a gynecologist's outfit as a sound. I believe I am justified in saying that no other operation generally practised in gynecic surgery has offered an equal measure of injury and disappointment; and, strange to say, the very men to whom the questionable refutation of this operation was due, were the leaders of the faction against the intrauterine stem.

Although I speak in such unqualified terms of division of the cervix uteri, still I do use the knife upon the part whenever I meet with the condition that in my experience requires it, namely, what has been termed by some the "pinhole os." This condition is usually found associated with developmental flexions, and in that form known as anteflexion of the cervix as a rule. In these cases the most careful touch fails to locate the situation of the os externum. We are able to detect it only when we examine the part through a Sims's speculum and put the mucous membrane of the cervix on the stretch with a tenaculum, then the os externum appears as a minute opening on a level with the surface of the cervix, with sharply defined edges as though punched out. This is simply a membranous stenosis of the external os. If we explore the cervical canal beyond with a probe, we shall find it free from obstruction and as large in calibre as is normal. This membrane may be divided with so little pain that the patient will not be aware of it unless told, and with only a few drops of blood. I make three or four incisions through it, and insure against union by passing a sound for a few days. The relief afforded by this slight operation is sometimes very great, showing that the dysmenorrhoea of obstruction was not at the seat of flexion, as it very rarely is in anteflexion of the vaginal portion, but was owing to the obstacle at the os externum. I suspect that the relief afforded now and then by the severe operation of division of the cervix was in these cases of pinhole os, and could have been relieved just as effectually by this simple operation. This operation is quite necessary to insure the comfortable retention of the intrauterine stem, and, as the incision involves nothing but a duplication of mucous membrane at the margins of the external opening, the introduction of the stem may directly follow the operation.

Posture has been resorted to in the treatment of uterine versions. Some of these postural treatments may be called very radical. One method suggested is to place the patient's head and shoulders upon the floor and her pelvis upon the bed. This position was to be kept for fifteen minutes. By this means the intestinal contents of the pelvis gravitated into the abdominal cavity, while the uterus assumed its normal position (Godefroy). The genupectoral position is a much more convenient method of applying the same principle. In retroversions without fixation, the posture is very efficient in aiding the reposition of the uterus. As a preliminary to the introduction of the Hodge pessary, it is very useful and in every way safer than the sound. That a flexion could be so treated, as claimed by Edis, would hardly seem practical. The position of the organ would of course be changed by the posture, but the dis-

tortion of its long axis would probably persist. Especially is this true of the developmental and the acquired flexion of long-standing. I have tested this method frequently in flexions, and have never failed to find that the uterus would assume its altered position with the flexion unchanged.

Women suffering from long-standing versions and flexions are generally thin subjects. In these cases Tilt recommends that the fattening process be undertaken. From what I have seen of these subjects, it would be a very difficult treatment. No doubt if the pelvic organs were well supported with fat a normal position would be preserved with greater ease.

Various operative measures have been undertaken. Shortening of the round ligaments has been tried very recently, but the operation is said to be a very difficult one, as the fibres of the ligament are not easily recognized. There is one objection to this operation as a means of radical cure, and this is, Why should not the shortened ligaments again stretch under the operation of the original morbid cause, and which by this operation is not removed? Perineorrhaphy for retroversion and elyorrhaphy for anteversion have been tried. Boivin and Duges report a case of anteversion of many years' standing, caused by cellulitis in the course of the right round ligament, and which was cured by a free incision in the right labium, permitting the escape of thick pus; and Baker Brown advised the removal of the clitoris when the uterine distortion appeared due to masturbation. These various operations require no comment other than simple mention of the fact that eccentric ideas and operations always have, and very likely always will be, followed now and then in the treatment of versions and flexions.

This is the proper place to mention one method of treatment, concerning which it would be vain to make an attempt to reconcile conflicting opinion. This is the pessary. A noted gynecologist told me that a friend, also a distinguished gynecologist, called upon him. He said to him, "Look round my waiting-room and see if any of your former patients are there."

"Yes, I see several."

"How do you account for it?"

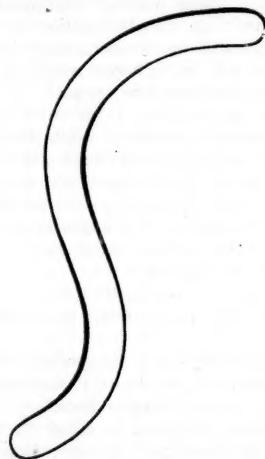
"I don't know. I am a better gynecologist than you are."

"I know you are; but I can explain the mystery. I use the pessary and you do not. Patients always seek the physician who can relieve them."

This anecdote is given to illustrate the extent to which, in both theory and practice, these rival schools clash on the subject of the pessary. Ten years have made a great change for the better among experts. The theory of the pessary is to a certain extent being reduced to a practical formula. You will no longer hear men rise in their places in obstetrical or gynecological societies, and publicly avow that they never use the instrument. In the sense that they all practise it, every physician is a gynecologist, and it is among this class that we find, at this day, the most bitter enemies of the pessary. A patient presents herself to her physician, who, on examination recognizes the fact that her uterus requires some form of mechanical treatment. He adjusts a pessary, but finds that he made his patient worse instead of better. It may be a long time before he makes another trial, and if he has no better success

we are quite sure to count another enemy of the pessary.

The truth is, that the selection of a pessary suitable to the displacement and its proper adjustment, is one of the most difficult manipulations of office-practice—difficulties that are not surmounted except by study and constant practice. You will understand that when I speak of a pessary in this lecture, I mean the vaginal pessary, and when I speak of a uterine displacement I allude to a version, for I firmly believe that no pessary acting within the area defined by the vagina, can straighten a flexed uterus. In giving instruction in the use of the pessary, I have always kept two points constantly before the mind of the student, first, to become well grounded in the theory of the pessary; and, secondly, to reach this theoretical ideal by the simplest means possible. Avoid, therefore, all complicated pessaries. If you cannot succeed in retaining a displaced uterus mechanically in position by means of a simple form of the instrument, you will fail with the more complex. I use for retroversions, copper wire rings covered with gum, which may be shaped into any form desired—usually a modified Hodge-Smith. The vulcanized pessaries of this form which are supplied by the trade, are very uncertain instruments, for the reason that they are made without any fitness for the case, and many sold depart so widely from the original model, that no vagina can contain them safely. The following figure shows a pessary of such extreme curve that it



cannot be used, and all the pessaries made by the firm that manufactured the one from which this profile is taken, are after the same pattern. I have so recently gone over the whole subject of the action of pessaries in the correction of uterine version, and which is accessible to you in the *Transactions of the American Gynecological Society* for 1883, that it is unnecessary to reenter upon the subject here. One thing I may repeat with profit—briefly, we must abandon the theory of the lever action of the Hodge form of pessary. It draws the posterior vaginal cul-de-sac back and the cervix with it, and thus rotates the fundus forward; while the posterior vaginal wall is thus acted upon, the anterior is also carried backwards to a like extent. The greater

the forward or upper curve of the pessary is, the more ample the vaginal displacement. Suppose we were to introduce a pessary of the form shown in the figure, the vaginal vault would be carried to such an extent backwards, that we would find the anterior vaginal wall placed violently upon the stretch. This is one reason why the instrument would quickly become intolerable to the patient. A moderate amount of anterior curve—much less than is usually found in the vulcanized form—is what I usually give in shaping the flexible ring. Always regard a patient who wears a pessary as under treatment. This is but one thing, among many others, that it is necessary to do to relieve the patient. A pessary can no more be trusted to do its work than you can trust a splint upon a fracture without supervision.

In anteversion we are dealing with a far more difficult problem—difficulties that in a large measure account for the number and extraordinary forms of the pessaries that have been invented. And here, as in retroversions, I have found simplicity in the mechanism of replacement to be a decided gain over the more complicated methods. Of late years I have found the various sizes of the last model of Thomas's anteversion pessary to answer every purpose in the majority of cases. The employment of the anteversion pessary implies extra care in the oversight of the patient. The anterior vaginal wall is exposed to considerable pressure and is very liable to ulcerate in consequence. Nothing but frequent removal and cleansing the part will prevent this accident.

Each one must learn for himself the application of the pessary, but you will have the lesson half learned at the outset, if you gain a realizing sense of the fact, that here we have one of the most difficult departments of minor gynecology.

In the concluding lecture I shall take up the important and hotly debated subject of the intrauterine stem.

## ORIGINAL ARTICLES.

### HYDROCHLORATE OF COCAINE IN THE TREATMENT OF NASAL AFFECTIONS.

BY CHAS. E. SAJOUS, M.D.,  
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WHILE performing some experiments with the hydrochlorate of cocaine to ascertain its value as a local anæsthetic for intranasal operations, I noticed that when the mucous membrane covering the turbinated bones was distended—whether as the manifestation of either an acute or a chronic inflammatory process—one application of a four per cent. solution was sufficient to cause, in three minutes, its absolute collapse.<sup>1</sup> Not only did it return to its normal thickness, but, when applied to a membrane in which hypertrophic changes had not taken place, the contraction was so great that the conformation of the bony structure beneath could be easily discerned. The state of collapse continued for about half an hour, when the membrane returned to its distended condition.

A glance into the pathological anatomy of the

<sup>1</sup> Dr. F. H. Bosworth, of New York, has reported similar observations, *Medical Record*, Nov. 15, 1884.

catarrhal affections of the nasal cavities, excepting that characterized by atrophy, will make it evident that we have, in this contracting property of the drug, the very antagonistic power we require in the treatment of those affections. In other words, we have the mechanical constriction inducing absorption which we exert in a much less effective manner with astringents, and pressure by means of bougies, cotton wads, etc.

To illustrate better the force of this assertion, I am obliged to give an outline of the pathological processes of acute, chronic, and hypertrophic catarrh, the three affections in which the drug would seem to be indicated, basing the opinion emitted as to those pathological processes upon the observations of Rindfleisch, Cornil and Ranzier, Heitzmann, Green, Ziemssen, Lewin, Woakes, and others, and my own.

When an acute catarrh, or "cold in the head," is brought on by exposure to cold, the impression made on the peripheral nerves is transmitted through the sympathetic to the vaso-motors of the nasal membrane, and the result is a sudden contraction of its vessels, soon followed by dilatation. The flow of the blood through them is at first hastened, then slackened, and it accumulates more and more as the current becomes slower. After some time the engorgement becomes so great that the serum transudes through the vessel-walls, accompanied by leucocytes, fills the neighboring parts, causing distention, and penetrates through the epithelial layer to the surface of the membrane, dragging along with it some of the leucocytes, or pus corpuscles, and sometimes red corpuscles and epithelium. The distention would be limited, however, were the layer of venous sinuses, or erectile caverns—termed the "turbinate corpora cavernosa," and situated between the membrane proper and the periosteum—not present. These sinuses, most abundant over the turbinated bones, especially at their posterior portion, take an active part in the inflammatory process by becoming filled with venous blood. As the disease progresses, the secretion, at first thin and watery through the action of the hyperstimulated serous glands, which pour out their normal secretion in excessive quantities, becomes more and more charged with broken-down epithelial cells, lymph corpuscles, pus globules, etc., until it assumes the character of thick, tenacious mucus, or moco-pus, according to the cell elements held in suspension.

Reducing the above to its simplest expression, we have cold as a primary cause, and vaso-motor paresis as a result, followed by the symptoms of secondary dilatation of the bloodvessels: engorgement and transudation through their walls. If we now consider the action of the drug as described, and note, besides, the change of color occurring in the membrane, which sometimes becomes almost white, we can but conclude that it exerts its constricting influence by diminishing the blood-supply, and that in order to do this it must stimulate the vaso-motors. That it does it powerfully cannot be doubted, if we judge by the rapidity of action and the thoroughness with which it is exerted. The membrane proper must not only be influenced, but the venous sinuses must be completely emptied, in order to render possible the absolute contraction induced. To sum up,

therapeutically, the powerful stimulation caused by the hydrochlorate of cocaine antagonizes the vaso-motor paresis, thus counteracting the vascular engorgement and the transudation.

It is generally conceded, by the great majority of authors, that an attack of acute coryza cannot be arrested when it has progressed beyond a certain limit, this being due to the fact that the vaso-motors, at first paralyzed by the impression transmitted from the periphery, are kept so by the secondary vascular engorgement until the secretion of the membrane has become great enough to overbalance the vascular exudation, and thus relieve the intramural pressure in the vessels. But if we take in consideration the fact that we can, by powerfully and suddenly stimulating the vaso-motors by means of electricity, extreme cold (ice) or heat (galvano-cautery, or the flame<sup>1</sup>), cause the distended membrane to collapse, and remain so for a certain length of time, we can easily accept the fact that an agent possessing the same qualities as the above, without presenting the difficulties and giving rise to the secondary pain militating against their use, is a valuable acquisition to our list of remedies for the affection.

As a result of the above conclusions, I determined to try the effects of the drug in a case of coryza as soon as I should be called upon to treat one. But, none being forthcoming, I "took" a cold by exposing my head and neck to a strong draught. I soon began to sneeze violently, my eyes became suffused, and all the symptoms of a mild coryza set in, including "stuffiness," and consequent difficulty of breathing through the nose. Allowing the stage of dryness to proceed, I waited until free secretion had begun, then applied the four per cent. solution freely over the two inferior turbinated bones on each side. A sensation of slight heat immediately followed, soon replaced by a feeling of relief and the disappearance of all irritability. At the end of three minutes the "stuffiness" had completely disappeared, and did not reappear until about three-quarters of an hour later. A renewal of the application was followed by the same results, while, after a third, the distention and consequent stenosis did not recur.

Although the attack was not severe enough to present much resistance to the action of the drug, it was sufficiently so to indicate a positive power to overcome the paralyzing action of the peripheral irritation. I have not the least doubt, however, that in a severe case local applications of a four per cent. solution of hydrochlorate of cocaine to the membrane, and quinine internally to antagonize the systemic disturbance, would afford a more rapid and effective result than any treatment now at our disposal.

In simple chronic catarrh, the momentary state of the vascular supply during an acute attack has become reduced to permanency, the repeated distensions to which the vessels have been subjected have finally caused these to remain distended in irregular fusiform dilatations, and their walls have become softened and more permeable. The layer of venous sinuses or

<sup>1</sup> *Vide La flamme à petites dimensions.*, par Louis François Gondret, Paris, 1847.

"turbinate corpora cavernosa," although but slightly influenced organically, are more susceptible to irritation, and the least exposure causes their erection. As a result, the already decreased lumen of the cavities becomes more limited, until, in some cases, absolute stenosis exists at each exacerbation.

It is in this class of cases that the constricting action of the drug principally shows itself. In seven cases in which I have used it, its power was as manifest as in acute coryza. Notwithstanding the paretic state of the vaso-motors, made evident by the marked vascularity in the non-irritated state, its action, although not quite as rapid, was as marked. So empty had the parts become of all fluids that the density of the membrane was such that firm pressure with a probe did not produce the least depression. In order to bring about this result, the venous sinuses had to be emptied of their venous blood, the vessels of their contents, while what infiltration was present had to be suddenly absorbed. The state of the membrane after the application indicating that these conditions had been fulfilled, we cannot but conclude that each abnormal condition forming the pathological state had been antagonized, and that the drug presents the necessary qualities for curative treatment—*i. e.*, stimulation of vaso-motors, relief of vascular distension, absorption of infiltration and of the new connective-tissue elements, which frequently transform the simple chronic state into that accompanied by hypertrophy.

In order to test practically the truth of this hypothesis more time is naturally required than a period of three weeks, since which the experiments were begun. I can only as yet report less tendency to frequent exacerbation and great satisfaction on the part of the patients to be able at any time to arrest the partial or complete stenosis, which most frequently affects them during the night and interferes with sleep.

In the hypertrophic variety we have to contend with firmly organized adventitious connective tissue, besides the conditions existing in the simple chronic state. New vessels have been formed, the epithelial layer has become thickened; in short, we have a condition which surgical interference or mechanical action only can modify. A number of authors advise pressure by means of hard rubber or metallic bougies for the reduction of the redundant membrane by absorption, and report excellent results. Although I do not make use of this method, considering it too painful and as a slow and tedious way of obtaining results which we can reach by much simpler and more rapid means, I avail myself of the fact it seems to prove—*i. e.*, that this firmly organized adventitious connective tissue *can* be absorbed, along with the other adventitious elements. Accepting this fact, and turning our attention to the contracting power of the hydrochlorate of cocaine, it seems but rational that that contracting power is the very *desideratum* in the treatment of this hypertrophic variety by induced absorption, its value being much enhanced by the painlessness of its application. Here, again, time is necessary to turn a pure hypothesis into a certainty, but the prize is sufficiently valuable to merit serious trial.

In hay fever, I doubt whether it will have any value other than a momentary abatement of the hyperesthetic condition of the nasal membrane, and to diminish the intensity of the nasal symptoms. As a preventive, it could only be effective by applying the solution every half hour during the usual six or eight weeks of exposure, a rather unpleasant task and one calculated to become as tedious to the patient as the disease itself.

As an anesthetic for nasal operations, my experiments so far have not realized my anticipations. Of the fourteen cases in which they were performed, two only showed marked effect. I first tried the two per cent. solution, then the four per cent., and at last the ten per cent., and, to my surprise, noticed no difference in the actions of the two latter. The three solutions had been obtained at a most reliable drug-store, that of Mr. W. Llewellyn; they were tried and found "excellent" by my colleague of the eye clinic at the Jefferson College Hospital, and were used by me carefully and repeatedly at intervals of five minutes, after drying the membrane with absorbent cotton. In applications of glacial acetic acid, the short but burning sensation was slightly modified, while in galvano-cauterizations the slight pain accompanying flat applications was somewhat diminished and shortened. In all of these cases the contact of the probe was not felt immediately before the applications and the pain when the galvano-cautery was used only became evident when the instrument had penetrated the superficial layer. However, the pain usually accompanying these applications is so slight that were the hydrochlorate of cocaine as effective in the anterior nasal fossae as in the eye, or in other parts of the respiratory tract, its use would doubtlessly be limited.

1630 CHESTNUT ST.

#### ON THE METHODS OF TESTING FOR ALBUMEN IN URINE.

BY BERNARD PERSH, M.D.,  
HOSPITAL STEWARD, U. S. ARMY.

IN experimenting with the numerous tests for albumen, and considering their relative values, one cannot help thinking that the old tests, nitric acid and heat, possess many advantages.

*Heat* is a test which will always be used in proving the presence of albumen; and, no matter what reagent is applied, heating of an albuminous urine will be necessary to make the reaction more prominent, to obtain positive results, and to verify the numerous other tests now in vogue.

In applying heat, care must be taken to render the urine slightly acid, by the addition of a drop of acetic acid, or a concentrated solution of citric acid, to half an ounce of urine of normal acidity; otherwise, derived albumens may be present which are not coagulated by heat. Good results are obtained by placing two inches of urine into a test-tube, of medium size, and carefully heating the upper third of the urine to the boiling-point. If albumen is present, the upper portion will show coagulated albumen or opalescence, while the lower part remains clear, thus forming a distinct contrast, and

showing the presence of extremely small quantities of albumen.

Upon boiling neutral, alkaline, or faintly acid urine, earthy phosphates are precipitated at times, due to the fact that carbonic acid, holding the phosphates in solution, is set free upon the application of heat. The sediment thus formed may be easily distinguished from albumen by being readily dissolved by the addition of a drop or two of acetic acid. If the urine has the proper acid reaction, as indicated above, phosphates will not be precipitated upon boiling. In working with slightly acid, but albuminous urine, it may, however, happen that the urine, upon applying heat, is rendered neutral or faintly alkaline by the precipitation of albumen, and this must be prevented by the addition of more acid, otherwise the albumen may become transformed into alkaline-albumen, or earthy phosphates may be precipitated, upon the application of heat.

By suspending a chemical thermometer in a test-tube, containing albuminous urine and applying heat, it will be seen that the fluid usually becomes opalescent at a temperature of about  $158^{\circ}$ , and that the coagulated albumen assumes a flaky appearance upon raising the temperature. If only small quantities of albumen are present, turbidity may not take place until the temperature is raised to the boiling-point.

Brunton and Power (*St. Bartholomew's Hospital Reports*, 1877) took the coagulation-point as a basis for distinguishing the different forms of albumen in urine. They found that in the same patient, as well as in different cases of albuminuria, the coagulation-point varied between  $144^{\circ}$  and  $180^{\circ}$ . Numerous experiments proved that food generally lowers the coagulation-point; due, perhaps, to the fact that the first products of digestion coagulate at a lower temperature than the later products, which have a higher coagulation-point than serum-albumen, while the final products of digestion are not coagulated by heat.

The coagulation-point of albumen is also influenced by the presence of paraglobulin, sodium chloride, and other salts. It will be found that if globulin and salts are present in large quantities in albuminous urine, the coagulation-point is raised to  $170^{\circ}$  or more, while in a one per cent. solution of serum-albumen, washed almost free from salts, coagulation takes place at a temperature of  $125^{\circ}$ .

The two bodies principally to be looked for in albuminous urine are serum-albumen and paraglobulin. The experiments of Lehmann, of Copenhagen, as well as Edlefsen and Senator, prove that globulin is present in all specimens of albuminous urine; and a case of globulinuria, in acute nephritis, was reported in the *Lancet* for December, 1883, in which globulin was found in the urine, but no serum-albumen. Paraglobulin is held in solution in the urine by small quantities of salts, and, to prove its presence, the urine is largely diluted, and a stream of carbonic acid is passed through it. If paraglobulin is present, the urine becomes cloudy, but finally the globulin settles at the bottom. The supernatant fluid may then be tested for serum-albumen. Very dilute acetic acid or alkalies will also precipitate para-

globulin; but, if added in excess, acid or alkaline-albumen is formed. A simpler test is that reported by Dr. William Roberts, at the meeting of the Glasgow Pathological and Clinical Society, on February 12, 1884. He states that when albuminous urine is added, drop by drop, to a large quantity of water, a milky trail, following each drop, is noticed in many cases, until the whole fluid becomes opalescent. In repeating this experiment with urine, in which the presence of paraglobulin had been shown by the carbonic acid test, the same results were obtained, and the turbidity disappeared upon shaking the fluid with air, by introducing a current of oxygen, or by adding acetic acid or an alkali.

I found that this test becomes more distinct by adding the urine, drop by drop, to water saturated with carbonic acid, or by diluting one part of the suspected fluid with ten parts of carbonic acid water.

If the observations of Senator, confirmed by the experiments of Bartels and Edlefsen, are correct, that paraglobulin is present in larger amounts in the urine of patients suffering from amyloid disease of the kidneys than in other albuminous urines, then the distinct tests for this proteid will necessarily be of great value, and more so the carbonic acid test, since it offers means for quantitative analysis and allows the testing of the same specimen for serum-albumen.

Of what value the termination of the different temperatures at which coagulation takes place in albuminous urines may be in the diagnosis of disease, is a question which deserves close consideration; but it is evident that the coagulation-points are affected by numerous conditions.

*Nitric acid* is applied by pouring the acid under the urine by means of a pipette, by inclining the test-tube containing the urine and letting the acid flow slowly along the side of the glass to the bottom, or by placing the acid into a test-tube and carefully overlaying it with urine. If albumen is present, there will be formed at the point where the acid and urine meet, a distinct, sharply defined zone of coagulated albumen. This formation may also be due to resins and urates; but the reaction produced by these agents is not as well marked as that due to albumen. The cloudiness caused by resins, usually copaiba or cubeba, disappears upon boiling or the addition of a few drops of alcohol, and the distinct odor of these drugs is easily detected in the urine. The turbidity caused by the urates disappears upon heating, and may be further distinguished from that due to albumen by the fact that the zone caused by the proteid forms at the place where the acid and urine meet, and extends upwards; while the urates form above the acid, and extend downwards. By adding nitric acid to urine rich in urea, nitrate of urea forms at times. It crystallizes in six-sided rhombic tables, and is insoluble in nitric acid, and may thus be readily distinguished from albumen.

Some care is required in applying the nitric acid test, since coagulation of albumen will not take place if the urine is rendered only faintly acid by the addition of a few drops of nitric acid; while, if the acid is poured into the urine, the serum-albumen is converted into acid-albumen, which is soluble in dilute

acids, and is not coagulated by heat. In working with urines containing very small quantities of albumen, a minute or two will elapse at times before the zone is developed; while, if too long a time is allowed to pass before the result is noticed, the coagulated albumen may have become transformed into soluble acid-albumen, and no reaction will be visible. If much coloring matter is present, a brown ring will form at the point of contact, which will interfere in some measure with the nicety of the test. But by applying Heller's test, or any of its modifications, with a little care, good and positive results are always obtained, and one part of albumen in six thousand parts of urine is readily detected. To obtain such results, it is, of course, necessary that the urine should be perfectly clear, and it should, therefore, be filtered; or, if this is not sufficient, rendered transparent by adding liquor potasse, boiling and refiltering.

*Potassium ferrocyanide* and acetic acid is one of the older tests for albumen, and it is frequently used in quantitative and qualitative analysis. For qualitative analysis, a test-solution is prepared, by dissolving one part of the salt in three parts of tepid water, allowing the solution to cool and separating the surplus salt by filtration. A solution of a pale yellow color, and of a specific gravity higher than that of urine, is thus obtained. The test is applied by rendering the suspected fluid strongly acid with acetic acid, and adding a small quantity of the ferrocyanide afterwards. If albumen is present in the proportion of one part, or more, of albumen to ten thousand parts of urine, a turbidity will show itself; or, if applied by the contact method, a distinct zone of hydroferrocyanide of albumen will be formed. This formation is again dissolved if the albuminous fluid is present in excess.

Dr. T. W. Pavy<sup>1</sup> substituted citric acid for acetic acid, and has prepared test-pellets, containing sodium ferrocyanide and citric acid. Prepared in this form, the reagent recommends itself for bedside analysis; but I have had no experience with pellets of this combination, and it appears to me that they are rather difficult to prepare, and, owing to the efflorescence of the sodium salt, difficult to preserve. These objections may, however, have been overcome, and they may be only imaginary on my part, at least Dr. Pavy states that these pellets will keep for an indefinite time.

Dr. G. Oliver<sup>2</sup> has prepared a test-paper, by saturating bibulous paper with a solution of potassium ferrocyanide. I have made these papers by saturating boiling water with the salt, placing the paper in the hot solution, and quickly drying it after saturation. To render the urine acid, Dr. Oliver uses a paper containing citric acid. In preparing the citric acid paper, good results were obtained by dissolving six drachms of citric acid in an ounce of water, and saturating the paper with this solution. Concentrated solution of citric acid renders the paper stiff and liable to break while being placed in the test-tube.

There is no doubt that citric acid offers a convenient form for bedside urinary tests, but it presents the objection that it precipitates mucin. In using citric acid, it is, therefore, advisable to add the acid first, and wait a few minutes before applying the reagent. If a turbidity occurs, and it is due to urates or oleo-resins, it will disappear upon heating or boiling; but if caused by mucin, the precipitate will remain. With these exceptions, the results obtained with potassium ferrocyanide are positive; and as a clean, easily prepared, and tolerably sensitive test for albumen, it commends itself.

The *brine test* consists of a concentrated solution of sodium chlorate, acidulated with muriatic acid. It was introduced as a test for albuminous urine by Dr. William Roberts,<sup>1</sup> and is prepared by adding to seven ounces of sodium chloride sixteen ounces of water, separating the surplus salt by filtration, and adding to a pint of the filtrate one ounce of dilute hydrochloric acid. The reaction produced by this test depends upon the fact that, if sodium chloride, in excess, is added to an acid solution of acid-albumen, the acid-albumen is precipitated. It is, therefore, necessary that the acidulated brine should be in excess, and to obtain this result, it should be applied in the same manner as the nitric acid test. The brine test is not as liable as nitric acid to precipitate the urates, and it does not act upon the coloring matter of urine; but it produces a cloudiness with peptones and oleo-resins. These precipitates disappear upon the application of heat. Owing to its non-corrosive action, it has been recommended as a bedside urinary test, either in the fluid state or in the form of a powder, in conjunction with citric acid. In both these forms it is easily carried and readily applied; but the large quantity of the reagent required to produce reaction, renders some of the other tests more suitable for use in the sick-room. The brine solution is as delicate a test as nitric acid, and it offers the advantage that, after adding the sodium chloride mixture to urine, the same specimen may be examined for sugar.

*Picric acid*, as a test for albumen, has found a strong advocate in Dr. George Johnson. He recommends it as a clean and delicate test, and he has lately published a little book<sup>2</sup> bearing upon the subject.

Picric acid is not very soluble in water, requiring about ninety parts of this solvent, of ordinary temperature, for its solution. A concentrated aqueous solution is prepared by dissolving six grains of picric acid in an ounce of boiling water, and separating the surplus acid, which crystallizes out upon cooling, by filtration. Applied in this form, picric acid gives most delicate results as a test for albuminous urine; but its low specific gravity (1003), as well as its yellow color, resembling that of some urines, requires some nicety in its application. For the detection of small quantities of albumen, three inches of urine are placed in a test-tube, held in an inclined position, and an inch of the aqueous solution, or more, is gently poured on top of the urine. If

<sup>1</sup> British Medical Journal, February 17, 1883.

<sup>2</sup> On Bedside Urine Testing, including Quantitative Albumen and Sugar. By George Oliver, M.D. London, 1884.

<sup>1</sup> Lancet, October 14, 1882.

<sup>2</sup> On the Various Modes of Testing for Albumen and Sugar in the Urine. By G. Johnson, M.D., 1884.

albumen is contained in the urine, it will present a turbid appearance as far as the acid extends, while the lower part, as well as that part of the acid which is not combined with the urine, will be perfectly transparent, thus bringing the smallest quantities of albumen in view. The opalescence may be made to appear more prominent by heating the fluid, or by allowing the picrate of albumen to settle, when a distinct zone will be formed between the acidulated urine and the urine.

In using this test, it is necessary that the acid be added in excess, since picrate of albumen is dissolved by an excess of albumen, and that the suspected fluid be rendered distinctly acid. In most specimens of urine, the picric acid is sufficient to produce the required acidity; but if the urine is highly alkaline, the addition of an acid becomes necessary. I prefer for this purpose citric acid, since it increases the intensity of the reaction and prevents the picrate from being dissolved by an excess of albuminous fluid. In fact, I believe that much better results are obtained by using a solution containing picric and citric acids. By dissolving an ounce and a half of citric acid and sixteen grains of picric acid in two ounces of boiling water, and filtering after cooling, a solution of a decidedly acid reaction and high specific gravity is obtained, which, in the hands of the busy practitioner, may prove of value, since it is much more easily applied, and gives more distinct results than the simple aqueous solution of picric acid. Another way of applying the acid, is to reduce it to a fine powder, and add a few particles of it to the urine. As the acid sinks, a distinct cloud surrounds it and marks its course, if albumen is present. Dr. Oliver has prepared test-papers of this reagent by saturating strips of bibulous paper in a concentrated solution of picric acid, and in this form a convenient bedside test is furnished. I have prepared these papers by saturating bibulous paper in a concentrated alcoholic solution of picric acid; but, since the quantity of the reagent absorbed by the paper is small, it is necessary to acidulate the urine, and for this purpose a citric acid paper should be used.

As to the value of this test, there can be no doubt that, with a little care, the presence of one part of albumen in twenty thousand parts of urine can be proved. But picric acid also forms precipitates with peptones, urates, mucin, and the alkaloids; and, for some of the latter, it is even a more sensitive test than for albumen. I have frequently been able to prove the presence of quinine in the urine a few hours after giving three grains of the sulphate; and in the urine of a patient who took fifteen grains of quinine, I was still able to produce a distinct zone of the picrate of quinine two days after taking the medicine. In aqueous solutions of sulphate of quinine, one part in forty-five thousand; strychnine, one part in six thousand; sulphate of atropia, one part in six hundred; sulphate of morphia, one part in two hundred, the alkaloids are readily indicated with the standard test-solution of picric acid. These figures prove, however, that, with the exception of quinine, the alkaloids, or their salts, are not given in sufficiently large quantities to indicate their presence in the urine by the picric acid test. The results ob-

tained with ergot were, however, somewhat different, and four drops of the fluid extract, added to one ounce of water, or one grain of ergotin dissolved in five ounces of water, gave a distinct turbidity with picric acid. The urine of a patient, who had taken two one drachm doses of fluid extract of ergot within ten minutes, showed a distinct turbidity with picric acid five hours after taking the medicine. The urine of this patient failed to give a reaction with picric acid previous to taking the medicine; and the precipitate noticed after its administration disappeared upon the addition of an acid, or the application of heat, and was believed to be due to the presence of the alkaloids of ergotin. This experiment was repeated, in different individuals, with corresponding results.

Picric acid is also a very sensitive test for peptones, and Dr. Johnson proposes to use the acid as a means of distinguishing them from albumen. But we possess a much more positive test in Fehling's solution, and still better results may be obtained, in testing for peptones, by adding liquor potassæ and a minute quantity of cupric sulphate to the suspected fluid, when, if peptones are present, a red color will show itself.

Dr. Randolph recently recommended Millon's reagent and iodide of potassium as a most sensitive test for peptones. He adds to five cc. of the suspected fluid, which must be cold and of acid or neutral reaction, two drops of a concentrated solution of potassium iodide and four or five drops of Millon's reagent. If peptones are present, a yellow precipitate appears; if they are absent, a red sediment is formed.

I have mentioned these tests for peptones, since the presence of these proteids is constantly indicated by the newer tests for albumen, and since they may be of value in the diagnosis of cases of peptonuria, which is found to be constantly present in chronic purulent diseases, cancer, and the later stages of pneumonia.

The precipitates caused by picric acid and alkaloids, peptones, and urates, readily disappear upon the application of heat at different temperatures, and below the boiling-point, or upon adding alcohol or a few drops of nitric acid. If the turbidity is due to alkaloids, it will, in many instances, dissolve upon adding a concentrated solution of citric acid, but if the precipitation is caused by albumen, the intensity of the reaction will be increased.

The cloudiness caused by the action of picric acid in urine containing mucin does, however, not disappear upon the application of heat, or the addition of alcohol, or nitric acid, and doubts may therefore arise, whether the precipitate is due to albumen or mucin. Fehling's solution, offers, however, ready means of distinguishing between these two bodies, since it produces a violet color with the proteid, but gives no reaction with mucin. Mucus may be found in almost all urines, but its presence in small quantities is not readily indicated by picric acid, and it is by no means a sensitive test for mucin.

The *potassio-mercuric iodide* test was recommended by M. Charles Tanret, and the formula for its preparation seems to be based upon the atomic equivalents

of the bichloride and iodide. It is conveniently prepared by dissolving 1.35 grammes of mercuric chloride in 23 cc. of water and adding this, drop by drop, to a solution of 3.32 grammes of potassium iodide in 15 cc. of water, constantly stirring while mixing. To this solution of potassium-mercuric iodide 20 cc. of acetic acid and sufficient water to make the whole measure 100 cc. are added. The result is a fluid of light greenish color with a specific gravity of 1.042. Good results may, however, be obtained in testing for albumen by using the test solution so much employed as a reagent for alkaloids, and which is prepared by dissolving sixteen grains of mercuric chloride and one drachm of potassium iodide in four ounces of water. This solution may be rendered acid by substituting six drachms of acetic acid for an equal amount of water, or by adding six drachms of citric acid.

The high specific gravity of Tanret's test, as well as its color, render it much more easy of application as a test for albuminous urine than picric acid. By employing this test after Heller's method, most perfect results are obtained, and a turbidity will still be observed at the point of contact in urine containing albumen in the proportion of one part in 20,000. But mercuric iodide also gives reactions with peptones and alkaloids, and for the latter it is even a more sensitive test than picric acid. Aqueous solution of strychnine and sulphate of quinine, one part in 100,000, sulphate of atropia, one part in 20,000, sulphate of morphia, one part in 5000, produce distinct reaction with Tanret's solution; and this test is as sensitive for proving the presence of the alkaloids of ergotin, or their products, as picric acid. The turbidity due to the presence of alkaloids or peptones disappears upon the application of heat, and it is, therefore, readily distinguished from the precipitation caused by albumen.

In the preparation of test-papers containing this reagent, I have used a solution of thirty-two grains of mercuric chloride and eighty grains of potassium iodide in an ounce and a half of water. In applying the test-paper, it must not be forgotten to have the suspected fluid decidedly acid, and for this purpose a citric acid paper may be added. But since the test-papers contain only a small quantity of the reagent, care must be taken not to add too much of the suspected fluid, otherwise the precipitate may become redissolved by an excess of albuminous urine.

*Tungstate of sodium* was proposed by Dr. Oliver as a test for albuminous urine, and a test solution containing this reagent was prepared by him by mixing equal parts of a concentrated solution of citric acid and sodium tungstate. A convenient way of making the test solution, based on Dr. Oliver's directions, is to dissolve ten drachms of citric acid and a drachm and a half of sodium tungstate in two ounces of water. After filtering the solution a perfectly clear, colorless liquid of high specific gravity is obtained, which, if applied after Heller's method, will show the presence of albumen in the proportion of one part in 20,000. Its high specific gravity, as well as its cleanliness, renders this solution particularly well adapted as a test for albuminous

urines; and if it was more generally used I am convinced that it would be preferred to either picric acid or mercuric iodide.

In preparing the reagent it will frequently be found that, upon mixing the ingredients, effervescence takes place, due to the presence of sodium carbonate, which enters in the manufacture of the tungstate. Even comparatively pure samples of sodium tungstate contain sodium carbonate, which, by the action of citric acid, becomes changed into citrate, but its presence does not interfere with the test.

I believe that this test is merely a modification of Scheibler's phospho-tungstate of sodium test, which is prepared by adding phosphoric acid to tungstate of sodium. It is one of the most delicate tests for alkaloids, and, like most of the reagents of this class, indicates albumen in extremely small quantities. Like Scheibler's reagent, the solution of citric acid and sodium tungstate produces a precipitate with alkaloids, although the reaction is perhaps not as marked as that produced by picric acid and mercuric iodide. The precipitate thus formed disappears upon the application of heat or the addition of a few drops of alcohol. Only a slight precipitation is produced by adding this reagent to solutions containing peptones, and the turbidity disappears quickly upon the application of heat, but, similar to the precipitates produced by the presence of alkaloids, reappears upon cooling. I am doubtful whether peptones are ever contained in sufficient quantities in the urine to be indicated by sodium tungstate, since with concentrated solutions of peptones, prepared by artificial digestion, only a slight turbidity is obtained with this test, while, after separating the precipitate thus formed by filtration, and adding picric acid or mercuric iodide to the filtrate, a copious precipitate is observed.

A solution for the preparation of test-papers may be prepared by dissolving two drachms of sodium tungstate in an ounce of water and adding sufficient citric acid to render this fluid distinctly acid. Papers saturated in such a solution, and dried after saturation, give good results, if used in conjunction with citric acid paper, but in most urines more than one citric acid paper will be required with this reagent to produce the desired acidity, while with picric acid and mercuric iodide one paper usually proves sufficient.

In using this test it is necessary that the urine should be in excess, since the albuminous precipitate becomes redissolved by an excess of the reagent, but this can be prevented by employing the contact method.

I have of late employed these tests in examining the urine of patients sick with diphtheria, and I was able to prove the presence of albumen with picric acid, sodium tungstate, and mercuric iodide for a day or two before any reactions with the other reagents were shown. And for weeks, after heat and nitric acid had failed to give indications of albuminuria, the other tests proved the presence of the proteinid and dictated caution in the care of these cases, even after they had apparently recovered, and were, to all appearances, in the enjoyment of good

health. Whether the results obtained by the more sensitive tests for albumen indicate a pathological condition, is a question which only time can decide. It is true that the presence of albumen may be proved in some cases in which there is not the slightest indication of disease, and in which we are unable to attribute the presence of albuminuria to diet, exposure, or some local cause. But by watching such cases for years, important results may be obtained, and the first symptoms of serious complications may possibly be traced back to the time when minute quantities of albumen first showed themselves in the urine.

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#### SUBPLEURAL ECCHYMOSES OF THE PERICARDIUM, PRODUCED MECHANICALLY AS A COMPLICATION OF RICKETS.

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SUBPLEURAL ecchymosis of the pericardium, except in connection with the same condition of the pulmonary pleura, has not been studied outside of medico-legal science. Its chief interest in this department of medicine, resides in its occurrence in death from asphyxia. The hemorrhages are so minute as commonly to be classed with petechiae. The subject of this article is distinct from the above, both in the manner of its causation and the extent of the blood effusion.

A search through works on pathological anatomy, and through treatises, essays, and observations on rickets, has been rewarded with but little success, and only in a single instance has a case been recorded in which a somewhat similar condition was found.<sup>1</sup>

As in the white patches on the ventricular pericardium in the same disease, the lesion under consideration possesses no clinical interest; but the rarity of the occurrence, to judge from the silence of writers, may give it sufficient importance to make it worthy of attention.

A rachitic colored female child, aged two and one-half years, died from asphyxia, the result of a catarrhal pneumonia, involving the entire left and the anterior lower half of the right lung. The body was examined forty-eight hours after death. There were no evidences of pleural inflammation. There was hypertrophy of the right ventricle, and the pericardial sac contained half an ounce of clear reddish fluid. The left lung was solidified and small; the right, in its unaffected portion, in a state of compensatory emphysema. The visceral and parietal layers of the pericardium presented their usual appearance. Upon the subpleural surface of this structure were three ecchymotic patches, each with a dark centre

and red circumference. They were in close apposition with the enlarged costo-chondral articulations of the third, fourth, and fifth ribs on the left side. The inferior spot, opposite the ventricular apex, was the largest, with a long diameter of half an inch. Its slightly greatest length was vertical. The superior one, corresponding to the auriculo-ventricular septum, was the next in size, and the middle one, situated on a line from right to left and between the other two, was the smallest. On cross-section they showed a thickened and elevated area.

It seems evident that these appearances were produced by the heart's impulse against the projecting nodes of the deformed thorax; that they existed but a limited time, and that they were probably caused by the irregular and forcible action of the heart in the long death struggle of slow suffocation.

To account for the difference in size of the spots it is necessary to consider the physiological action of the cardiac muscle.

The apex does not descend, but the forcible impulse and its quarter rotation from left to right are sufficient to produce a greater amount of *bruising*, may we say, than any other part could do.

The ventricular base necessarily descends the most; and in assuming a circular form in systole, it is brought much closer to the chest wall than whilst in its oval diastolic shape, with its long axis transverse.

At the centre of the ventricle, the factor of downward displacement and contraction are of less effect, and hence the middle ecchymosis was the smallest of the three.

In three cats, in which the ribs were cut through, and wooden pegs inserted with one of their ends resting on the left ventricle, these ecchymoses did not appear. The animals were killed in from one to three days after operating.

Therefore, whilst allowing the possibility of accidents in manipulation, it still seems that obstructive lung disease and a thickened heart muscle are requisites for the production of such hemorrhagic spots.

#### MEDICAL PROGRESS.

PEPTONURIA.—Among those observers who have closely studied the subject of peptonuria, M. GROCCO PIETRO stands conspicuous. The conclusions at which this physician has arrived deserve considerable attention. Peptonuria is said to be a sign of disease, and to have no clinical relationship with albuminuria. It may be a symptom of general or local, infective or non-infective disease. Malarial fevers, typhoid fever, scurvy, purpura haemorrhagica, septicæmia, and acute phosphorus poisoning may be attended with peptonuria. Local morbid processes which produce this sign are nearly always inflammatory affections tending to the formation of pus. Some cases of rapidly increasing morbid growths are accompanied by this symptom. When a local disease is associated with peptonuria, it is considered likely that the peptones are formed at the seat of mischief, and that they appear in the urine after absorption into the blood. In general diseases, the genesis of peptonuria is still unknown. It is possible that peptonuria may decide between the presence of a

<sup>1</sup> Dr. H. Rehn, of Frankfort, reports in the *Central-Zeitung für Kinderkrankheiten*, No. 15, Erster Jahrgang, p. 227, an autopsy on a child two years of age, which had had rickets. There existed an extrapericardial adhesion. The heart lay almost in complete apposition with the thoracic wall, which was due to the separation of the lung by the inward projection of the beaded portion of the ribs. The parietal pericardium in the lower third was united to the costal pleura corresponding to the fifth costo-chondral articulation by a netlike adhesion, two cm. in length, and one in breadth.

simple and purulent inflammation. Peptonuria is frequent at the period of resolution of cases of lobar pneumonia; it may be observed during the period of gray hepatization.—*Lancet*, Nov. 1, 1884.

**THE MICROCOCCI OF PNEUMONIA IN THE BRONCHO-PNEUMONIA OF MEASLES.**—DR. GIACOMO LUMBROSA has recently made communication to the Académie de Médecine. The presence of microorganisms in the pneumonic lung is now a well-demonstrated fact; the part which they play in the causation of the disease being as yet unsettled. These microbes have been recently studied by Dr. Afannassier, of St. Petersburg, in Prof. Cornil's laboratory. Following the advice of Prof. Cornil, Dr. Lumbrosa examined the lungs of a patient, dead of broncho-pneumonia of measles, with reference to the micrococci of pneumonia. In all the microscopic preparations he found: 1. Round micrococci, some small, others large. 2. Ovoid micrococci (of Friedländer and Salamon), of variable dimensions, often joined, two together, but rarely forming chains. His observations lead him to presume that the microbes of measles produce a terrain favorable for the development of the micrococci of pneumonia.—*Progrès Médical*, October 11, 1884.

**SPLENECTOMY.**—DR. ALESSIO GIOVANNI performed this operation, on October 14, on a woman, forty years of age, affected with pernicious anaemia and chronic hypertrophy of the spleen. The patient was doing well seventy-two hours after the operation.—*Gazz. degli Ospitali*, October 26, 1884.

**THE CHEMICAL NATURE AND PHYSIOLOGICAL ACTION OF COBRA POISON.**—DR. NORRIS WOLFENDEN thus sums up a paper on this subject:

There are in cobra poison two distinct venoms: 1. Cobra globulin-venom; 2. Cobra albumen-venom. They exist probably in different proportions in different secretions, but these two are always present. What other albumens may be present are not of the same importance as these two.

The globulin-venom is destroyed by high temperatures, but the albumen-venom is not so affected.

The globulin-venom poisons the respiratory centre, producing no paralysis of muscles; the albumen-venom does not affect the respiratory centre, but produces marked and progressive motor paralysis.

I may here mention that from the result of some investigations I have for some time been making upon the blood of many animals, I cannot consent to the generally received opinion that cobra venom exerts no influence upon the blood. My investigations, which will shortly be published, have convinced me that cobra venom decolorizes a large proportion of the disks, by driving out the hemoglobin, and breaks up a large number of the white disks completely, filling the plasma with minute granules. The bacterial forms which are present in such large numbers, in cobra venom, I do not think have anything to do with the activity of the venom. When recovery takes place from poisoning with a dose of the poison insufficient to kill, it is not improbable that a condition of blood-poisoning may supervene secondarily.

I may add, in conclusion, that the animals experimented upon were in all cases white rats, and the injec-

tion was made always under the skin of the back, in the dorsal region.

The globulin-venom is slower in its action than the serum-albumen, and a longer period often elapses after the injection before symptoms supervene, or terminate life. The globulin is very deadly, and when once the symptoms have supervened, asphyxia rapidly ends the existence of the animal.—*Indian Medical Gazette*, September, 1884.

**THREE CASES OF CÆSAREAN SECTION.**—SURGEON-MAJOR ARNOTT, of the Bombay Medical Department, reports three cases of Cæsarean section. The result of the three cases was that three children were saved, one mother lived ten days, another three days, and the third thirty-six hours.—*Edinb. Med. Journ.*, Dec. 1884.

**LIGATION OF THE RIGHT COMMON CAROTID AND INTERNAL JUGULAR VEIN.**—At the October meeting of the Northwest Provinces and Oudh Branch of the British Medical Association, SURGEON SHIRLEY DEAKIN, I.M.D., showed an Eurasian male patient, aged forty-two, on whom he had ligatured with carbolized gut the right common carotid and internal jugular vein two months before. The operations were performed at the time of the removal of a large, foul, fungating epithelial mass, which had sprung from some cervical glands, in which the disease had recurred after the removal of the right half of the tongue at a hospital in Calcutta, where a second operation was attempted and abandoned. One ligature was applied to the artery, two to the vein; and as much as possible of the diseased tissue, which extended deeply beneath the angle of the jaw, was scooped out previous to the application of zinc chloride paste with morphia. Zinc paste was applied at intervals, five times in all, the application being followed by pain on swallowing, so severe that gastrostomy was contemplated. Poultices and iodoform ointment were applied in the intervals between the applications. Subsequently dry tannic acid was dusted on the small remaining mass, a saturated solution of the acid in glycerine with carbolic acid being also applied. The original opening had greatly contracted; the incision made for the ligation had completely healed, and the patient was free from pain. Though his appetite was poor, he could eat food and swallow it; he was able to be up and to walk about the garden. A complete cure could hardly be hoped for, yet the relief and comparative comfort experienced by the patient showed how much might be done in apparently hopeless cases to mitigate pain and distress.—*Lancet*, Nov. 15, 1884.

**CURABILITY OF SYPHILITIC ARTERITIS.**—M. LEUDET has recently related the case of a man, the subject of syphilitic infection, who was noticed to have undergone a decided alteration in mental behavior, to have lost memory, and to have suffered from frontal headache. Whilst these symptoms prevailed, the superficial branch of the left temporal artery was seen to have become much thickened, so as to feel like a hard cord, and twice its normal diameter. Seven months later the corresponding vessel on the right side became affected in the same way, and coincidently the cerebral symptoms increased in intensity. The administration of anti-syphilitic treatment was followed by the return of the affected arteries to their natural state, and by the recovery of the patient.—*Lancet*, November 1, 1884.

# THE MEDICAL NEWS.

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SATURDAY, DECEMBER 20, 1884.

## CHOLECYSTOTOMY AND CHOLECYSTECTOMY.

DURING the present year three important contributions to the operations of incising and excising the gall-bladder have appeared in the *British Medical Journal* for May 3d, the *Deutsche Zeitschrift für Chirurgie*, Bd. xxi., Hefte 1 and 2, and the *American Journal of the Medical Sciences* for October, from the pens, respectively, of LAWSON TAIT, WITZEL, and MUSSER and KEEN. In addition to the cases contained in these papers, COURVOISIER, of Basle, has recorded in the *Correspondenzblatt für Schweizer Aerzte*, No. 15, a successful cholecystotomy and a recovery after cholecystectomy; and we have to add to the cases of both procedures, tabulated by Musser and Keen, cholecystotomies from the practice of Trendelenburg, reported by Witzel, of König, recorded in the *Verhandlungen der Deutschen Gesellschaft für Chirurgie* for 1882, of Boeckel, referred to in the *Gazette Médicale de Strasbourg*, No. 8, 1884, and of Courvoisier, as above indicated. In addition to the case of extirpation of the gall-bladder by Langenbuch, which constitutes No. 12 of the table of Musser and Keen, that surgeon has had two other successful operations, a record of which may be found in the *Verhandlungen der Deutschen Gesellschaft für Chirurgie* for 1883; while, as we have just pointed out, Courvoisier's patient recovered.

From these data it will be our object to present our readers with a summary of the present state of our knowledge of the most important points concerned in the two operations. In order that there may be no misunderstanding, we have to state that

the cases of Hughes, Brown, Blodgett, and Keen, in which the abdominal cavity, but not the gall-bladder, was opened, are excluded.

1. Cholecystotomy was first practised by Dr. J. B. Bobbs, of Indianapolis, on June 15, 1867. Fifty small calculi were removed from the bladder, the incision in it was closed by one point of suture, and the woman recovered. The operation has been practised at least 27 times: by Tait in 13 cases, by Keen in 2 cases, and by Bobbs, Sims, Ransohoff, Von Winiwarter, Gardner, Eddowes, Savage, Courvoisier, Trendelenburg, König, Boeckel, and a surgeon referred to by Tait, each in 1 case. Of the 27, 21 recovered and 6 died, the fatal result in 3 having been due to collapse and hemorrhage, in 2 to collapse alone, and in 1 to a probable escape of bile into the peritoneal cavity. In twenty of the operations the edges of the opening in the gall-bladder were at once stitched to that in the abdominal wall, thereby forming a temporary fistule. In the case of Sims, a portion of the viscera was extirpated previous to sewing it to the superficial wound. In the case of König, the belly was opened, the bladder attached to the abdominal wall by sutures, and not incised until the tenth day. In Kocher's case, adhesions were excited by placing a bit of Lister's gauze in the wound, and the gall-bladder was incised on the seventh day. In three of the remaining exceptional examples the incision was closed by sutures and the organ returned into the abdomen. The case of Bobbs in which one stitch was used, recovered, as did that of Courvoisier after the continuous suture, while the patient of the surgeon referred to by Tait died from the escape of bile into the peritoneal cavity after the use of the continuous suture. In the seventh exceptional case, Von Winiwarter established a fistule between the gall-bladder and the small intestine. This was effected by uniting them with stitches, suturing the intestine to the abdominal wound, opening the gut on the fifth day, puncturing the opposed surfaces through the incised intestine, and, finally, closing the latter with sutures. Hence, this operation was not an ordinary cholecystotomy, but a cholecystenterostomy.

Several different methods of operating have been adopted. With the view to prevent the escape of bile or mucus into the peritoneal cavity, Kocher excited adhesions between the viscera and abdominal wall before opening the former, by inserting a bit of gauze in the wound, and König stitched the bladder to the belly, the procedure being similar to Howse's operation for gastrostomy. The former method should be rejected, while the latter is scarcely indicated, as peritonitis was not induced in a single one of the twenty cases in which the bladder was accurately sutured to the wound in the abdominal

wall before it was opened. During the operation the escape of the contents of the gall-bladder into the peritoneal cavity may be prevented by using Keen's *scoop*, while the subsequent adhesions which rapidly form obviate secondary dangers of this kind. Hence we conclude that the ordinary procedure is worthy of common acceptance.

In three cases the incision in the gall-bladder was closed with sutures, and the organ returned into the belly. Two recovered, and one died from the escape of bile into the peritoneal cavity. Tait declares that this procedure is dangerous in consequence of the periodical filling and emptying of the bladder, and because if a stone be left in the cystic or common duct, the wound is liable to reopen. The only objection to the ordinary procedure is the formation of a permanent fistule, which happened in at least three instances; but as this is merely a source of inconvenience, we agree with Tait and Keen in rejecting suture of the gall-bladder.

2. Cholecystectomy is said by Tait to have been done 6 times, with 3 deaths, but it is quite certain that all of the operations were not total. Excluding the case of Sims, in which during the operation of cholecystotomy a portion of the bladder was cut off before attaching it to the abdominal incision, and the case of partial extirpation of S. W. Gross, which was merely incident to nephrectomy for carcinoma, we find only 4 recorded cases, 3 from the practice of Langenbuch and 1 from that of Courvoisier. All recovered, so that with this limited experience, the procedure has to be pronounced free from danger. The operation is performed by first dissecting the bladder from its connections with the liver and then tying the cystic duct. Langenbuch's reason for resorting to it is because it removes the cause of the formation of biliary calculi. Should the common duct be patulous, the operation may be done, but if it be obstructed by an unremoved or undiscovered stone, the procedure is not justifiable. Under any circumstances, we are disposed to think with Tait and Keen that, in view of the comparative safety of cholecystotomy, extirpation of the gall-bladder exposes the patient to a needless additional risk, and that it should, therefore, be abandoned.

#### "TAKING COLD."

IN that admirable address with which Dr. Flint has recently delighted the medical profession, he has fallen foul of the time-honored phrase, "taking cold." He holds that this condition of things does not exist. If we are to be deprived of this favorite and familiar pathogenic factor, what recourse have we? In that doubtful state in which, according to Smollett, the apothecary uses water, the doctor

relieves his dilemma, and gives abundant satisfaction by the comprehensive phrase—taking cold.

At this season, more especially, when all the world is "catching cold," it were well to inquire if Prof. Flint's position is a tenable one. Do we "take cold," or "catch cold?" Dr. Flint assumes that the world, and even the more enlightened medical profession, regard cold as a demon, a contagious entity, if not an all-pervading microbe, which forcibly enters our frail bodies, and works some violent mischief.

Surely, it is the common experience of mankind, that, in certain conditions of the system, exposure to cold, or to cold and its ally, dampness, induces a morbid state—a complex of symptoms of various kinds. If practical experience, which Dr. Flint so strongly commends, be our infallible guide, why reject it in this instance, and heed it in all others?

The phrase—catching cold—had its origin in a ruder state of society, and in the infancy of science, when "cold" was the antithesis of "heat," and it has survived the crude notions in which it originated. It is not now a contagious entity, which we "catch" as we do a specific disease, but a phrase to signify the effect of a certain impression, of which the state of being cold is an element. The most favorable condition for this impression is that state of the body induced by confinement in a close, warm, and air-vitiated apartment, the skin being relaxed and perspiring, and the superficial sensory nerves impersisble. Under these circumstances, a draught of cold air, directed against certain parts of the body, will excite phenomena which we entitle from long usage—taking cold.

In *Blithedale Romance*, Miles Coverdale declares, "To own the truth, I was little better than an icicle, and began to be suspicious that I had caught a fearful cold." His suspicions were confirmed, and he thus explains his mishap: "The truth was the hot-house warmth of a town-residence, and the luxurious life in which I had indulged myself, had taken much of the pith out of my physical system; and the wintry blast of the preceding day, together with the general chill of our airy old farm-house, had got fairly into my heart and the marrow of my bones."

No words could more aptly picture the popular conception of what is meant by taking cold, than Hawthorne's description.

There are certain parts of the body especially susceptible to such impressions, and they stand in a peculiar pathological relationship to some distant organs. Thus, the impression of cold on the nape of the neck, or on the ankles, is apt to excite a disturbance of the broncho-pulmonary mucous membrane—on the lumbar region, of the kidneys. The inter-mediation of the nervous system is, no doubt,

necessary to the production of these effects, especially of the sympathetic or vaso-motor system. A curious illustration of this mechanism, but through the agency of the mind only, is afforded by the experience of a gentleman, who sitting opposite to a supposed open window at dinner, was so impressed with the injury to be done him by the impact of the cold air on his unprotected head and neck, that he did actually get a violent cold, yet the window, of the most transparent French plate glass, was actually closed. Here the mental impression was sufficient to induce that disturbance of the vaso-motor nerves of the broncho-pulmonary mucous membrane. How much more certainly would the actual impact of the cold air-current have accomplished this result!

Although in the present state of science we may not accept the ancient phrase—taking cold—as it was originally meant, we are none the less compelled to admit the fact thus quaintly expressed, that a morbid condition may be induced by the impression of cold on the sensitive superficies.

#### THE WASHINGTON SANITARY CONFERENCE.

THE conference of representatives of State and Municipal Boards of Health which took place in Washington on the 10th and 11th of December, and a report of which we give in another column, was a very interesting and important one, and it is to be hoped that it will lead to valuable results.

The immediate cause of the calling of this conference was the danger of an invasion of this country by cholera next year, and it was the unanimous opinion of its members that this danger is a very real one, and that the country is at present by no means in a condition to meet it properly. The reports from the various States and large cities represented, which occupied the greater part of the time in the public sessions, made this fact sufficiently evident.

Upon the duties of State and Municipal authorities in view of the existing situation, there was substantial unanimity of opinion, which may be summed up in saying that these duties are to secure the greatest possible cleanliness of all premises; to get rid of privy vaults and cesspools; to provide pure water supply, and to prevent the use of that which is impure, including more especially the water of wells in large cities; to secure the earliest possible notification of the occurrence of cases of cholera, and, by isolation and thorough disinfection, to endeavor to prevent its spread.

The question as to what the National Government should be called on to do was one upon which there was more difference of opinion; although, even from the first, there was more agreement than might have

been expected. All agreed that the present National Health Organization is in a most unsatisfactory condition, and that some change is absolutely necessary. All the members of the conference except, perhaps, two, were opposed to having any system of National quarantine as at present administered. The great majority desired that the National health council should be a body representing the several States; or, at all events, those States which have regularly organized boards of health. Some wished that every State should be represented by a delegate to be appointed by the Governor, but the prevailing opinion was that a body so organized would be unwieldy.

There were also many shades of opinion as to what should be the powers and duties of the National health council, but the majority were inclined to approve the provisions of the Act passed in 1879, conferring certain powers on the National Board of Health.

The report of the committee appointed to report on the best course to be pursued by the Federal Government was rather vague, but embodied substantially the above ideas, and was approved without dissent, the report being recommitted to the same committee to be put into definite shape, and then to be sent to Congress as the opinion of the Conference. The result is a draft of a proposed Act which seems to be a very good one, and which, if enacted, will avoid many of the difficulties which beset the present National Board. It provides that the inspections at foreign ports, and the obtaining information as to the progress of contagious diseases abroad, shall be under the direction of the State Department, that the Board shall elect a secretary, who is to be its chief executive officer, that it may make investigations into the causes of disease, aid local boards, etc., and avoids placing the Board under the control of the Treasury Department, all of which appears to be very judicious.

In connection with this subject the proceedings of the Australasian Sanitary Conference, held at Sydney, N. S. W., from the 18th to the 30th of September last, and reported fully in the *Australasian Medical Gazette* of October, are of interest. This Conference was composed of the sanitary officials of the several colonies, and its main object seems to have been to frame quarantine regulations, to be recommended to the several legislative bodies of the different colonies for passage.

As regards cholera, the recommendations are that any vessel having on board any case which can reasonably be supposed to be cholera shall be quarantined, all hands, except those actually necessary to clean the ship, being detained under observation for not less than ten days, and that those who are

employed to clean the ship shall, after they have finished, be also quarantined for ten days.

It is also advised, in order to prevent rabies from becoming epidemic in the country, that no dogs shall be allowed to enter until they have been quarantined for six months.

Evidently the Australian sanitarians have strong faith in the efficacy of quarantine, or, at all events, mean to give it a thorough trial.

#### ALBUMINURIA PRECEDING HÆMOGLOBINURIA.

DR. OTTOMON ROSENBACH, who was the first to show that hæmoglobinuria could be produced in man by the sudden cooling off of the body, as by a cold foot bath, calls attention, in the *Berliner klin. Wochenschr.* for November 24th, to another fact, that albumen excretion sometimes immediately precedes a hæmoglobinuria, and explains the phenomenon in the following manner:

The effect of cold is to destroy a certain number of red blood-disks, and there is thus produced a certain amount of plasma, useless for the immediate requirements of the organism. It has, therefore, to be excreted. This is partially accomplished by the liver, which uses the coloring-matter in the preparation of bile, and partially by the kidneys, which separate the albumen only until the hæmoglobin from the destroyed corpuscles amounts to more than the liver alone can use up, when the kidneys begin to separate it also.

Rosenbach suggests that diagnosis may be aided by an examination of the feces for increased bile secretion, which may indeed be inferred from the conspicuously dark color characteristic of such secretion.

#### RELAPSING FEVER IN EGYPT.

DR. FR. ENGEL, physician to the Sanitary Legation in Cairo, has, according to the *Berliner klin. Wochenschrift*, of November 24th, recently had the opportunity of studying the blood of some cases of relapsing fever in Egypt, and found no difficulty in demonstrating the spirochæta Obermeieri. The constant association of this fungus with the disease would seem, therefore, to be pretty well established, while its comparatively distinctive shape makes it always tolerably easy of detection. The disease was epidemic; and up to October 3d, some eighty-eight cases had occurred, of which fifteen died. It was impossible to discover that it had been introduced from without, and the conclusion was that it was autochthonous, an observation confirming the statement of Hirsch, in his *Geographical Pathologie*, that Egypt is one of the countries in which relapsing fever has its natural habitat.

## SOCIETY PROCEEDINGS.

### THE NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.

(Specially reported for THE MEDICAL NEWS.)

WEDNESDAY, DECEMBER 10TH—FIRST DAY.

THE National Conference of State Boards of Health met on December 10th at the Ebbitt House, Washington, D. C., in accordance with a call which set forth the danger to this country from cholera and the importance of adopting necessary precautions. The Association was composed of representatives from Health boards in all parts of the country and the health officers of cities. There was a large representation present.

THE PRESIDENT, MR. ERASTUS BROOKS, of New York, called the Convention to order. He said that the record of mortality caused by the cholera, even in the past few months, was most startling. Little or no preparation had been made to meet the disease in Paris or London, although it had prevailed for a whole season in the south of France and Italy, and had swept away thousands of lives which might by proper precautions have been saved. He reminded his hearers of the terrible mortality from cholera in the city of New Orleans from 1832 to 1855, the deaths from the disease during that period having reached 50,000. This excessive mortality was owing, he said, to the bad sanitary condition of the city during those years. Now, he said, thanks to a better public opinion and to the efforts of State and municipal health boards, New Orleans is perhaps as well prepared to meet the cholera as is any of the large Eastern cities. He said that although the masses of the people may not be well informed as to the character of disease germs and their propagation in the human body, in the soil, and in the atmosphere, all know what filth is and how it should be and can be removed. He discussed at length the importance of making preparations to meet the cholera.

#### THE ROLL-CALL

showed the following delegates to be present:

Drs. C. A. Lindsley, of New Haven, Conn.; J. F. McFarland, of Savannah, Ga.; J. H. Rauch, of Chicago, Ill.; E. S. Elder, of Indianapolis, Ind.; J. N. McCormack and William Breyfogle, of Kentucky; S. S. Herrick, of New Orleans, and S. R. Oliphant, of Shreveport, La.; J. A. Steuart and C. W. Chancellor, of Baltimore, Md.; S. H. Durgin, of Boston, Mass.; A. F. Holt, of Cambridge, Mass.; H. P. Walcott and S. W. Abbott, of Massachusetts; H. B. Baker, of Lansing, Mich.; Charles N. Hewitt, of St. Paul, Minn.; Jos. Spiegelhalter, of St. Louis, Mo.; J. N. Jackson, of Kansas City, Mo.; J. C. Crane, of Nebraska; I. A. Watson, of New Hampshire; E. M. Hunt, of New Jersey; W. M. Smith and Erastus Brooks, of New York State; J. H. Raymond, of Brooklyn; A. C. Mercer, of Syracuse, N. Y.; T. F. Wood, of North Carolina; C. W. Rowland, of Cincinnati, Ohio; A. H. Iddings, of Dayton, Ohio; Crosby Gray, of Pittsburg, Pa.; E. W. Gemer, of Erie, Pa.; J. Ford Prioleau, of Charleston, S. C.; H. B. Horbeck, of South Carolina; G. B. Thornton, of Nashville,

Tenn.; J. B. Lindsley, of Nashville, Tenn.; R. W. Mitchell, of Memphis, Tenn.; Wm. Perry, of Galveston, Tex.; J. E. Reeves, of West Virginia; J. G. Campbell, of Richmond, Virginia; J. T. Reeve, of Wisconsin; Smith Townshend, of Washington, D. C.; A. B. LaRyne, of Montreal, Canada; D. Montizambert, of Dominion of Canada; C. W. Covernton, of the Provincial Board of Ontario.

#### COMMITTEES APPOINTED.

The following standing committees were appointed:  
*On Federal Legislation*—Drs. Walcott, Smith, Rauch, Brooks, McCormack, Baker, and Herrick.

*On State Action*—Drs. Watson, Hewitt, Lindsley, Hunt, Hewitt, and Covernton.

*On Municipal Action*—Drs. Raymond, McFarland, Durgin, Breyfogle, and Rowland.

W. M. SMITH, the Health Officer of the Port of New York, read a paper in regard to

#### THE FAILURE OF THE MARITIME SANITARY REGULATIONS TO PREVENT THE INTRODUCTION OF CONTAGIOUS DISEASES INTO THIS COUNTRY.

He also referred to the unreliability of bills of health from foreign ports, and to the legislative efforts that have been made to have the sick on immigrant vessels cared for before landing. The difficulty in securing a sanitary condition of affairs on ocean steamers, he said, lies in the fact that the owners are not citizens of this country, and, as a rule, they are indifferent. He dwelt upon the dangers of bringing infectious diseases into this country unless coercive measures are adopted. On many of the lines steamers have now isolated hospitals. The surgeons are found to be very frequently incompetent and their isolation of contagious diseases and their treatment are often a complete failure. The reason of this is that the pay of surgeons is small, and in consequence they are principally young men who want to see the world before settling down to the practice of their profession. To correct this defect he urged that ship surgeons be appointed after an examination by a competent board, and that their salaries and tenure of office be made the subject of proper regulations.

DR. COVERNTON cited a case in point of an epidemic of smallpox introduced into the neighborhood of Toronto by an infected emigrant who had been allowed to land through the carelessness or inefficiency of the ship's surgeon.

The paper was referred to the Committee on Federal Legislation, to which Dr. Covernton, of Quebec, was added as a member.

At noon a recess was taken until 2.30 P. M.

Soon after the noon recess the delegates proceeded to the State Department in a body and

#### CALLED ON SECRETARY FRELINGHUYSEN,

to whom the Chairman stated the objects of the conference, and the need of coöperation on the part of the government and of national legislation. The Secretary said that he was in hearty accord with the objects of the Association, and would coöperate as to matters that might be within his jurisdiction.

The delegates, headed by the Secretary of State and

President Brooks, proceeded to the Executive Mansion and were presented to

#### PRESIDENT ARTHUR.

MR. ERASTUS BROOKS made an address, in which he thanked The President for the interest he had taken in matters relating to the public health, and expressed a hope that he would aid them in accomplishing the objects of the Conference.

THE PRESIDENT replied briefly, saying that he and the Secretaries of State and the Treasury were at present considering the subject of the importation of rags from infected ports, and hoped that a committee might be appointed from the Conference to confer with them on the subject. In the course of an informal talk, Secretary Frelinghuysen remarked that he thought the best place for disinfecting the rags was the port of export. Mr. Brooks replied that a majority of the delegates were of the same opinion.

Arrangements were made for further consultation on the subject between Secretaries Frelinghuysen and McCulloch and the Committee on Federal Legislation.

#### AFTERNOON SESSION.

DR. G. M. STERNBERG, United States Army, made a report on behalf of the committee appointed at St. Louis of the American Public Health Association upon

#### DISINFECTANTS.

This committee was divided into two sub-committees —one on the experiments on the comparative value of disinfectants, and the other upon their practical value. The former were entirely of a biological character.

DR. RAYMOND, of Brooklyn, reported on the practical side of the question. Sulphur, sulphate of zinc, common salt, and copperas are the only disinfectants in general use in this country. The germicide power of sulphur is generally established, but the best means of using it has not been determined. Experiments were made upon silks with sulphur, and after ten hours' exposure to the sulphur fumes the silks remained unaltered.

DR. J. E. REEVES, of West Virginia, offered a resolution in reference to the paper read by Health Officer Smith during the morning's session. It proposed an international committee of nine or more members, appointed by the leading maritime nations, whose duty shall be to supervise

#### THE MEDICAL AND SANITARY INTERESTS OF PASSENGERS UPON THE HIGH SEAS,

and to decide upon the qualifications of medical officers intrusted with their care, and requested the Secretary of State to consider the propriety of this suggestion, and, if practicable, invite the coöperation of foreign governments. The resolution was referred to the committee on federal legislation.

It was decided that the reading of all reports from individual delegates should be limited, and the Secretary proceeded to call the roll of States and cities.

*Connecticut*.—Dr. C. A. Lindsley gave a brief sketch of the satisfactory work of the State Board in the past, and the measures taken to guard against cholera.

*Savannah, Ga.*.—Dr. J. T. McFarland, City Health Officer, made a favorable report.

*Illinois*.—Dr. John H. Rauch, of the State Board, re-

ported good work done, and soon will have completed a thorough sanitary survey of the State; legislation has been perfected, and, in case cholera comes, the Board will have \$150,000 of State funds for use if the National Government does not do its duty.

*Indiana.*—Dr. E. S. Elder, of the State Board, reported 325 local boards of health, with officers, and the trustees of every township or village in the State form a local board. The State is especially exposed if cholera comes from the long river fronts and the many trunk lines of railways crossing the State, as well as the flat surface at low level above the sea.

*Kentucky.*—Dr. J. N. McCormack, of the State Board, reports condition not what it should be, but progress is being made. The Board has as ample powers as any State, but county and town boards are not yet thoroughly organized. Louisville, he said, is in especial danger in case of cholera, because of the water supply from surface wells and the general condition.

In the course of his report, Dr. McCormack referred incidentally to the epidemic disease recently prevailing in the mountains in the eastern portion of that State and Virginia, and stated that a competent medical inspector, Dr. J. O. Carson, of Bowling Green, had been sent by the State Board of Health of Kentucky to the afflicted district to investigate the outbreak. His (Dr. McCormack's) information indicated that in the news thus far received from that locality there was some exaggeration. When, however, he should receive a report from the inspector, and should have had an analysis made of the water to which the disease is attributed, he would be able to speak more definitely on the subject.

*Louisiana.*—Dr. R. S. Oliphant, of the State Board, reported on the sea coast and river quarantine, and of a convention held recently of neighboring Boards of States and cities.

*Baltimore.*—Dr. J. E. Steuart, of the City Board, said the water supply is exceptionally good, but the Board has been unable to arouse the authorities, or as yet to have the old system of privy vaults abandoned; quarantine has been practically raised or placed on a winter footing.

*Maryland.*—Dr. C. W. Chancellor, of the State Board, had nothing particularly gratifying to report, but the general health of the State is good.

*Boston.*—Dr. S. H. Durgin, of the City Board, gave an interesting description of the method of control over public bathing, baby-farming, hospitals, etc.

*New York City.*—Dr. Smith, of the City Board, read a carefully prepared paper on the methods of work and the precautionary measures taken, and at 5:30 P. M. the Conference adjourned until 10 A. M. December 11th.

During the session the President read a letter from Dr. Billings, informing the delegates that there are now in the Army Medical Museum, in this city, specimens of the comma-bacillus, received from Dr. Koch, and extending to them an invitation to visit the museum.

#### THURSDAY, DECEMBER 11TH.—SECOND DAY.

The Conference convened at 10 A. M. Dr. J. G. Cabell, of Richmond, Va., and Dr. William Canniff, of Toronto, Canada, were registered as delegates. The hearing of reports from State Boards and cities was continued.

*Brooklyn.*—Dr. J. H. Raymond, Health Officer, reported a good sanitary condition there.

*New York.*—Hon. Erastus Brooks, of the State Board, said that careful preparation has been made to resist the cholera, and he thought the State in as good condition as any other to fight the disease. Dr. Smith, Health Officer of New York City, who reported the day before, added some remarks about the continued use in some localities of well water, which is almost invariably polluted by surface filth, and thought that the use of water from wells in cities should be forbidden.

These reports were followed by others from Syracuse, N. Y., Dr. Mercer; Wilmington, N. C., Dr. Wood; Cincinnati, Dr. Rowland; Dayton, Ohio, Dr. Iddings; Pittsburg, Mr. Gray; Charleston, S. C., Dr. Prioleau; Columbia, S. C., Dr. Horlbeck; Nashville, Dr. Thornton; Tennessee, Dr. Lindsley; Galveston, Dr. Perry; Wisconsin, Dr. J. T. Reeve; Michigan, Dr. Baker; Canada, Coverton, and Quebec, Dr. Montizambert; and Toronto, Dr. Wm. Canniff.

*Richmond.*—Dr. Cabell said that the annual appropriation of \$10,000 made by the city authorities was not sufficient by half. The city at present was in a filthy condition. He said the death-rate among the colored population was so large as to excite the pity and commiseration of the whole community. He attributed it, not to constitutional peculiarity, but to poverty.

*Wheeling.*—Dr. Reeves said that, in spite of the statement of the health officer of that city recently in the public press to the contrary, the sanitary condition of Wheeling was now deplorable. The refuse of 12,000 people was emptied in and about the head of the water supply of the city. He had endeavored to cultivate a cholera fright, and he believed that the effect would be good, and that the service of the water supply would be moved three miles up the river beyond the point of contamination. Last year the total expenditure for sanitary purposes in Wheeling was the magnificent sum of \$327. He had recommended that women be appointed as inspectors in each ward, and he believed this would have good results.

*The District of Columbia.*—Dr. Townshend, the Health Officer of the District, made a brief report, in which he said that this city was in an excellent sanitary condition, and he believed that, with the completion of our present system of water supply, our sewerage, and the reclamation of the Potomac flats, Washington would not only be the most beautiful city on the continent, but the healthiest. He said that he had but little confidence in quarantine regulations to prevent the introduction of infectious diseases, but relied more on rigid sanitary regulations.

#### THE SOUTHERN PLAGUE.

DR. McCORMACK, of Kentucky, read a preliminary report of the results of an investigation into the causes of the epidemic made by J. H. Carson, a Kentucky inspector, which has recently been prevalent in that State. He discredited the theory of mineral poisoned water, and said that the disease was epidemic dysentery caused by malarial poison, generally caused by drinking stagnant water charged with it. The total number of deaths in the State did not exceed 225. The crops were not abundant this year, yet the people have plenty

to live on and keep their stock alive until the next harvest.

#### IMPORTATION OF RAGS.

THE PRESIDENT then read a telegram from Mr. Augustus Smith, a large importer of rags in New York, which stated that there was no case on record of cholera from rags, or of its breaking out in paper factories. Mr. Charles E. O'Hara, Secretary of the Seymour Paper Company of New York, stated that they had been successful in disinfecting imported rags from Egypt. They employed about two hundred hands, women and children, to sort the rags, and he only knew of two cases of smallpox or other contagious diseases among them.

#### THE COMMITTEE ON STATE ACTION

reported that the laws of the States are so diverse that it was difficult to formulate a system of uniform action. Each State should be fully advised of the conditions prevailing at the ports of neighboring States through which disease might gain admission to its own cities. In reference to interstate communication, it is essential that officers of State and Federal boards in adjacent States should promptly notify each other of any case of cholera occurring in its own domain.

It is also essential that local boards shall determine in advance how the first cases shall be cared for, so as not to lose valuable time and allow the disease to gain a foothold. It is the judgment of the committee that the time has come when the State health boards should be recognized in some national form as having authority to indicate what sanitary measures are necessary, and secure the same through those departments of the government under which they would naturally fall.

#### THE COMMITTEE ON MUNICIPAL ACTION

also presented their report, recommending the adoption of the following municipal regulations: That all surface wells be closed, privy vaults abolished, stagnant pools disinfected, sewers kept clear, accumulations of filth prevented in tenements, the food supply inspected, garbage promptly removed, and the attention of authorities of all institutions, public and private, and of individuals as well, be drawn to the great importance of maintaining habits of personal cleanliness as one of the most efficient means of warding off an attack of cholera or reducing its virulence. The authorities of all States, cities, or villages are urged to adopt measures which will result in the amelioration of all the conditions above referred to, with the warning that if the conditions are allowed to continue they will greatly promote the spread of cholera when it does come.

The Conference then adjourned until 4 o'clock.

In the interim the Committee on Federal Relations called by invitation upon the Secretary of the Treasury to discuss the best means of

#### DISINFECTION RAGS

and of preventing the introduction of disease through their means. The committee was informed that the authorities had the matter under consideration, and would soon promulgate their views in a circular of instruction to consular and customs officers. It is understood that there is a difference of opinion between the Secretaries of State and the Treasury as to place of dis-

infection. The former is said to favor disinfection at the port of export, and the latter at the port of import.

The Committee on State Action called upon the Secretary of State and consulted with him as to the consular regulations governing the inspection of foreign bound vessels.

#### THE CLOSING SESSION.

On reassembling, at 4:30 P. M., Dr. J. H. Raymond was called to the Secretary's desk, and the Chairman of the Committee on State Action made a supplemental report to the effect that

#### STATE BOARDS

should be promptly organized in States where they do not now exist, so as to secure efficient local boards, and that ample appropriations should be made in States, so that the State, municipal, and local boards may be enabled to work continuously and without embarrassment in case of epidemics.

#### COMPULSORY VACCINATION.

DR. J. T. McFARLAND, of Savannah, offered a resolution that vaccination should be made compulsory, under United States laws, and gave an instance in which his own persistent refusal to permit a vessel to come to Savannah until all on board had been vaccinated kept confluent smallpox out of the city, as there were two well-defined cases on board. The resolution was referred to the Committee on Legislation without discussion.

DR. WALCOTT, of Massachusetts, made a partial report from the

**COMMITTEE ON FEDERAL RELATIONS AND LEGISLATION,** that the draft of a bill had been prepared which needed more consideration and examination, and commented on various sections. He thought the collection of foreign statistics should be by consular officers through the State Department.

Dr. Chancellor, of West Virginia offered the following resolution: "That so much of the report on federal legislation be referred back to the committee, and the committee be increased by five, and the committee be directed to urge on Congress a bill providing for the organization of a health department of the United States."

#### THE PROPOSED BILL.

The rough draft of the bill prepared by the Committee on Legislation, and explained by Dr. Wolcott, embodied the ideas of the committee members of the requirements of preventative legislation.

The bill provides for:

1. A national health organization, made up of members of actual boards in the various States, to be appointed by the President and confirmed; to meet here annually, and to serve without compensation, except actual expenses. The board to have the usual officers; the secretary to be the executive officer, and not necessarily a member.

2. The board to make sanitary investigations; collect information; assist local boards in preventing disease; in case of epidemics, to report the matter to the President for his action before preparing regulations for local boards; and, if the latter neglect or refuse to enforce

them, the President may appoint officers to carry them into effect.

3. Provides regulations to govern vessels leaving foreign ports.

4. Provides the penalty for vessels entering ports in violation of the sanitary regulations.

5. Provides the enforcement of regulations by State and municipal boards.

6. Provides that the State Department shall collect, through our consuls, information and statistics of the sanitary condition of foreign countries for the use of the board and public information.

7. Authorizes the President to detail army and navy medical officers in case of necessity. The remaining two sections relate to minor details of organization and methods of expenditures.

Considerable debate followed, participated in by Drs. Rauch, Walcott, Chancellor, and others, and the resolution was adopted. The method of naming the additional members was debated and left to the committee.

DR. SMITH, of New York, from the Committee on Legislation, offered a resolution, which was adopted, providing an

#### INTERNATIONAL HEALTH COMMITTEE,

to be of three members appointed by the Secretary of State, who shall correspond with foreign health officials, and that a conference of boards of all maritime nations be asked for by the President of the United States, which conference shall adopt rules for carrying and inspection of ships and passengers.

The conference then, at 5.30 P.M., adjourned, to meet at the call of the President, it having been decided that such action might become necessary in view of the threatened approach of the cholera.

#### THE COMMITTEE ON FEDERAL LEGISLATION

held a meeting, immediately after adjournment, to complete the proposed bill for presentation to Congress, and will remain in Washington until the work is completed. The five additional members of the Committee were appointed as follows: Drs. J. C. Hearne, of Missouri; T. F. Wood, of North Carolina; C. W. Chancellor, of Maryland; E. S. Elder, of Indiana; and G. B. Thornton, of Tennessee.

#### THE NEW YORK ACADEMY OF MEDICINE.

*Stated Meeting, December 4, 1884.*

THE PRESIDENT, FORDYCE BARKER, M.D., LL.D.,  
IN THE CHAIR.

DR. JOSEPH E. WINTERS read a paper entitled  
**IS THE OPERATION OF TRACHEOTOMY IN DIPHTHERITIC CROUP DANGEROUS?—WHEN SHOULD THE OPERATION BE PERFORMED?**

He said that, at the close of a discussion in the Obstetric Section of the Academy at a meeting held in March last, the author of the paper of the evening declared tracheotomy in this condition to be the most dangerous of all operations in surgery. Such a conclusion he could not permit to pass unchallenged. The danger from hemorrhage, he said, had been greatly exaggerated, and he mentioned that Mr. Durham had not met with a single case of serious hemorrhage in his

service at Guy's Hospital. Bretonneau, to whom the profession was indebted for the revival of tracheotomy in the nineteenth century, did not speak of danger attending it or special skill being required for its performance. The canula and the after-treatment were the matters upon which he laid the most stress. Rousseau, who performed the operation in more than two hundred cases of diphtheria, regarded it as more delicate than dangerous. Rilliet and Barthoz considered it not dangerous. West stated that it was admitted on all hands that, in itself, it was not attended with danger.

He next proceeded to inquire, How does diphtheritic croup tend to produce death when left to itself? In a large proportion of cases, he said, by the prevention of access of air to the lungs; and tracheotomy afforded a fair chance of recovery by providing an artificial passage by which air could reach the lungs. When the operation failed to save life, it was either because the resort to it had been postponed until too late, or because sufficient and proper after-care and treatment were wanting. Tracheotomy perfectly accomplished its primary object—the rescue from death by asphyxia.

In regard to its influence on the original disease, Sir James Paget said that he had never seen the wound become diphtheritic after tracheotomy. Having seen this statement, Mr. Sperry wrote to Sir James Paget that he had observed this in several instances. Dr. Parker, of London, had seen it in only two instances, and Mr. Howard Marsh stated that diphtheria of the wound was rare. Having quoted Rousseau on the subject, Dr. Winters remarked that he would not advance the view that diphtheria never attacks the edges of the wound, although he believed this occurrence to be very rare. Carbolic washes were regarded as of great service, both in the way of the prevention and of the treatment of this complication.

In speaking of the influence of tracheotomy on the course of croup, he said that the operation secured for the larynx entire rest, and this of itself led to the suspension of the disease there. In this connection he quoted a number of cases reported by Sannais, Rousseau's pupil, in which this tendency to a cure was shown. It was well known that ulceration of the larynx, in connection with pulmonary disease, was sometimes cured by the performance of tracheotomy, and it was also a fact that, in these cases, if the opening thus made in the trachea was allowed to close up, the ulceration would almost certainly recur in the larynx. Having referred to the testimony of other writers, he said that in the autopsies that he had seen in cases in which tracheotomy was performed no membranes had been found to have formed below the seat of the operation. If, therefore, tracheotomy was not dangerous *per se*; if it afforded relief to obstruction of the glottis; and if it did not affect the course of the disease injuriously, it certainly brought with it no added element of danger.

He spoke next of the time when the operation should be performed. Was it right, he asked, when medicinal agents were found to fail, to trust to the exceedingly rare occurrence of expectoration of the membranes? The statistics of cases with and without tracheotomy were instructive, and he thought that such figures would at once decide what was the proper course to pursue. Nothing could be gained by delaying the resort to the

operation; while, on the other hand, it had been conclusively shown that delay seriously compromised the successful issue of the case. Having described the symptoms the alarming character of which indicated the necessity of performing tracheotomy at once, he remarked, "And yet we are advised to wait until death is imminent." As rational would it be, in strangulated hernia, he continued, to wait till gangrene had set in before operating. Delay here was dangerous in the same proportion.

The results of numerous autopsies showed that the lungs were in a state of marked venous congestion in cases in which tracheotomy had not been performed, and also in those in which it was done in the third stage, and death followed soon; while in those in which the operation was resorted to early, there was no venous congestion. Such a condition resulted, therefore, from the obstruction of the larynx, and not from the operation. The reason why pulmonary trouble apparently followed tracheotomy was because the lungs were, at the time, in a state of congestion, secondary complications having already set in. The proper way was not to wait until the results of protracted obstruction to respiration—such as carbonic acid poisoning, etc.—had appeared.

The life-giving properties of oxygen were acknowledged by all, and pure warm air he believed to be the very best remedy for diphtheritic croup. In a majority of cases of the affection death was due to want of oxygen and exhaustion of the nervous system. Oxygen was nature's sovereign remedy, and the furnishing of it to the patient should not be regarded merely as a last resort. An early resort to tracheotomy would no doubt save a large number of lives that were now lost, and, therefore, whenever the labored respiration (expiration as well as inspiration being difficult), the recession of the chest-walls, and the alteration of the voice left no doubt of the diagnosis, and when ipecacuanha was no longer successful in producing vomiting—it was time to perform the operation.

It was a mistake to suppose that early age contraindicated it, since instances had been recorded of its successful performance at the age of six and nine weeks. With his paper, Dr. Winters said, there was a table in which he had attested no less than seventy-four successful tracheotomies in children under two years of age performed since January, 1830, and twenty of these were under one year. In very young children, however, the disease advanced with much greater rapidity, and was also more liable to be attended with complications, than in older ones.

In the prognosis the following points would have weight: early age, previous ill-health, especially affections of a scrofulous nature, the presence of scarlatina or measles in the neighborhood when the child had not already had the disease, enlarged lymphatic glands, and nasal diphtheritis. It was a bad sign if the respiration did not become free, and also if there was difficulty of deglutition after the operation.

He then spoke of the necessity of proper after-treatment and careful nursing. The great causes of death after tracheotomy, he said, were, *first*, the too late resort to the operation; and, *second*, inefficient after-care, including, as one of the principal sources of danger, the want of proper attention to the canula. All the circum-

stances surrounding the patient ought to receive the most careful and watchful consideration.

As he had previously remarked, a most exaggerated impression of the danger of tracheotomy prevailed, and he thought it of great importance that the community at large, as well as the profession, should be taught to understand that the opinion that it was dangerous was erroneous. On the contrary, delay in performing it was highly dangerous, and he then proceeded to relate instances in which fatal results had followed such delay. In England nearly all the tracheotomies in hospital practice were performed by the house-surgeons, who were instructed not to wait in cases of emergency until the visiting surgeons could be summoned. To delay the operation in order to hunt up a skilled surgeon was as culpable as to leave a patient with a spurting artery for the same purpose. Every family physician should be ready to perform it at any time.

The conclusions of the paper were as follows: That tracheotomy of itself, if performed with care, involved little danger to life; that want of care in its performance was a frequent cause of fatal results; that the operation should be performed early, as delay was dangerous; that it was never too late to operate, however desperate the case; that no patient who died after the operation would have lived if it had not been performed.

In closing, he said he could not but express his profound conviction of the truth of a prophecy which had recently been uttered, that tracheotomy would soon be regarded as one of the minor operations of surgery.

DR. J. WILLISTON WRIGHT said that he had never regarded the operation of tracheotomy as an especially difficult one, though he was well aware that the conditions under which it was frequently performed in this city were most unfavorable. When, as was very apt to be the case, it was called for in a young child with a short neck and deep trachea, the chances of success were certainly problematical. Still these difficulties were not so great that they could not be surmounted, and a cool head and steady hand, with careful attention to every detail, were what was needed to obtain a satisfactory result. If the symptoms were not urgent, it was well to pause and check some of the hemorrhage; but if the danger was imminent, no time was to be lost in this way, and the bleeding veins were to be ignored altogether. He agreed with Dr. Winters that the hemorrhage would stop as soon as the knife entered the trachea, or, at all events, as soon as the tube was inserted. With regard to blood getting into the trachea, he could not see that this was of special importance; and it had sometimes seemed to him that this was the very thing needed, since it was the means of exciting violent expulsive efforts by which the mucus, as well as the blood in the trachea, could be gotten rid of.

As to the time when the operation should be performed, he agreed with the author of the paper that it should be resorted to early, and he would advise its performance in any case in which there was a certain diagnosis of diphtheritic croup as soon as severe symptoms supervened, which were not relieved by other remedial measures. The operation was not in any sense a cause of death. Except for the occurrence of possible complications, like pneumonia, it was not more severe than a cut in the arm or leg.

DR. A. JACOBI said that the subject of tracheotomy

had engaged the attention of many writers during the past two generations, and the author of the paper this evening had quoted a large number of them to prove that there was no danger connected with the operation. With the exception of the matter of hemorrhage, he had not told what dangers had been attributed to it, and how they could be avoided, or overcome.

As to the dangers, the principal one was from bungling operating. Tracheotomy was by no means necessarily a bloody operation, though it frequently was so in careless hands, or when the operator was in haste to get it through. The main point in performing it was to act deliberately. If it was deemed advisable to operate about the isthmus, it was best to peel off parts of the latter by Voss's operation. He thought it was a grand mistake to cut through the isthmus, as a rule, and that such a procedure was only justifiable in cases in which the patient was in imminent danger. He was not of the opinion of Dr. Wright, that, when considerable hemorrhage resulted from the incision, the operator should go on cutting right through. Under these circumstances it was often difficult to find the trachea at all, and he mentioned cases in support of his position. It was not by any means a matter of indifference whether blood got into the trachea or not. It was true the child might cough; but it would certainly not throw off everything in the act of coughing, and ten or twenty minutes afterward more blood would very likely come up. When any foreign body entered the smallest bronchi and the air-cells, the same effect was produced as by the presence of viscid mucus in bronchial catarrh. The air-cells being impeded, broncho-pneumonia would result; and broncho-pneumonia was very frequent after tracheotomy, as the result of blood getting into the small bronchi. As a rule, however, the entrance of blood into the trachea during the operation could be avoided, and in order to do this the operator should not cut into the trachea until he was able to see just where he was.

There was another danger to which it was, perhaps, well to call attention, viz., that of operating without an anæsthetic. It had struck him that a much larger proportion of the older writers were opposed to the operation than of modern ones, and he believed that the difference was due to the discovery of anæsthesia. Thus, a few years ago, Billroth had declared that tracheotomy was the most formidable of operations in childhood. Since chloroform and ether had come into general use it was very rare that death occurred actually during the operation. Without anæsthetics, the simple struggling of the patient was liable to result fatally, and he had known of children dying even in consequence of the struggles excited by the attempt to make a nasal injection. Of the two agents, chloroform and ether, the former, he thought, was greatly preferable, because ether required too long for the production of anæsthesia, and because the struggling before this was reached was dangerous. The principal dangers in tracheotomy, therefore, were from not using chloroform and from hemorrhage.

As to the time when the operation should be performed, Dr. Winters had stated that, if the diagnosis was made out, not to delay at all. In his opinion, however, whether the diagnosis of diphtheritic croup was positive or not, it was the duty of the physician to per-

form tracheotomy whenever there was laryngeal stenosis sufficient to produce symptoms of dyspnea. In some cases of simple laryngitis, there was the same obstruction of the air-passages as in croup, and the indication for tracheotomy was just as urgent. He objected to dividing an attack of croup into several stages. It was true that such stages seemed well marked in certain cases, but in many instances this was not so, and sometimes the diphtheritic process was so rapid that severe and extensive croup seemed to develop all at once. Whenever, therefore, there was laryngeal stenosis, a considerable amount of recession, lasting not merely for a few minutes, and well-marked and increasing dyspnea, especially in the morning, with cyanosis and a frequent and irregular pulse, the indication was to perform tracheotomy, whether the difficulty was due to the presence of membranes or some other obstruction.

Pneumonia was not a contra-indication; and in cases in which sepsis from diphtheria was present in the system, there was even a stronger indication for the operation than in others, because as soon as the trachea was opened the fetid inhalations from the mouth and nose were cut off. These, then, were the principal indications. In cases in which they did not exist, or but to a limited extent, it was better to wait, and there was all the more encouragement for doing this, on account of the recent advances which have been made in the medicinal treatment of croup. The bichloride of mercury, especially, had proved of very great service, and he was only confirmed in the opinion in regard to its efficiency, which he had expressed at the meeting of the Obstetrical Section of the Academy in May last, by the experience that he had had with it since that time. In ordinary cases of croup, therefore, he thought it was safe to delay operating until the bichloride had been given a fair trial, in addition to other remedies. He was glad to say that the percentage of recovery without tracheotomy in his cases of croup had been of late much larger than ever before.

He next proceeded to inquire of what patients died in fatal cases in which the operation had been performed. The first cause he mentioned was diphtheritic sepsis; and the second, other complications of diphtheria, such as paralysis, nephritis with uremic poisoning, adenitis, fibrinous pneumonia, etc. The third and principal cause was broncho-pneumonia or œdema of the lungs; and the fourth, the descending diphtheritic process. Many cases of the latter had been noted in this city during the last few years. Such cases would be found to do well for about twenty-four hours after the operation, when they would begin to grow worse again, and death would ensue in from fifty to seventy hours from the operation; the average time being sixty hours. The membranes would form down to the ramifications of the bronchi, and suffocation then result. In one case which he related there were convulsions, caused by carbonic acid poisoning, and these were relieved by the introduction of oxygen gas through the tube in the trachea.

DR. J. LEWIS SMITH said that it was well understood that the older the child was, other things being equal, the less the danger from tracheotomy. In two conditions the danger was especially great. The first was when the patient was nearly moribund. Under such circumstances the physician would be induced to operate hastily and without taking sufficient precautions

for the control of hemorrhage. The risk was, therefore, greatly increased in consequence of his not being able to feel his way. The danger was also greatly enhanced, as Dr. Jacobi had stated, by not operating with anæsthetics. The first case of tracheotomy that he had ever witnessed was an example of this. No anæsthetic was given, and amid the violent struggles of the child large veins were divided, with the result of causing very free hemorrhage. In this instance the patient died as soon as the trachea was opened, partly from the loss of blood and partly from the entrance of blood into the bronchial tubes. The other condition of peculiar danger to which he had alluded was when the operation was performed by a novice, and proper precautionary measures were not adopted. The author of the paper had advised that every physician should be prepared to perform tracheotomy at any time when it might be called for; but in a large city like New York he did not think this was good advice, especially to young men, because it was always so perfectly easy here to obtain skilled assistance, which would render the chances of success very much greater. Of course, in the country the circumstances are different.

Dr. Winters had intimated that it was requisite to have a positive diagnosis of pseudo-membrane before proceeding to open the trachea; but he agreed with Dr. Jacobi, that the degree of stenosis, produced by whatever cause, should be the only guide for the operation. He recalled two cases of acute laryngitis at the New York Foundling Asylum, in which there was marked stenosis, although there was no false membrane. No operation was performed, however, and both the cases terminated fatally. He thought, therefore, that it was a mistake to wait until the presence of such membranes should be determined before operating.

In diphtheritic croup there were two classes of cases, which differed materially as regards the necessity of an early resort to tracheotomy. In the first, which included a very large number of cases, the inflammation of the larynx commenced early, and the fibrinous exudation formed with great rapidity, so that the performance of tracheotomy was indicated at an early period. In the other class, the larynx became affected later (usually from the fifth to the eighth day), and the membranes did not form so rapidly. Hence, there was not the same urgent necessity for operating, and it was proper to defer this until a fair opportunity had been afforded for the action of other remedial measures. In the first rank of these, he placed alkaline inhalations, to which he believed that *tripsin*, which formed an important constituent of the *extractum pancreatis* now so much in vogue, could be added with advantage. In cases of diphtheria, he always watched the quality of the voice with the greatest care from day to day, and again and again he had been able to prevent any serious invasion of the larynx by such inhalations. Old remedies had also been revived with success in the treatment of croup. Calomel had been found to be very useful in the first stage, and the happiest results had been claimed from the use of the bichloride of mercury. At the Foundling Asylum, tubage, which had been employed twenty years ago by Trousseau, had been revived, with a fair amount of success as a substitute for tracheotomy, and Dr. O'Dwyer had paid special attention to this mode of treatment. He knew of at least one case that

had been saved by it; and in instances in which the pseudo-membrane did not extend very far, he believed that it would prove of essential service.

DR. JOHN H. RIPLEY said that his views of the dangers and difficulties of tracheotomy, and the consequences to be apprehended from it, are all opposed to those of Dr. Winters. In the first place, as to the dangers. The question under consideration was, not whether the operation of tracheotomy in general was a difficult and dangerous one, but whether it was difficult and dangerous in young children with croup. In his opinion, the danger consisted, first, in the condition of the child; and, second, in the necessity of performing the operation within a certain time. Dr. Winters had mentioned but one danger, viz.: hemorrhage; but he did not believe that this was the most common cause of death after tracheotomy. The child in whom the operation was called for is suffering from a diseased system, a stenosed larynx, and often an infiltrated neck. In order to get at the trachea, it was necessary to go down for perhaps two inches through the tissues, and this necessitated a great deal of time and care; while at the same time the patient might be so paralyzed with the poison of diphtheria that it was liable to die at any moment from syncope. In addition, if the stenosis was very great, the child was liable to die of apnoea; or, again, it might die from paralysis of the heart induced by the efforts of struggling, as mentioned by Dr. Jacobi. For his part, he was content to go with the small minority of authorities, especially as it included the names of such men as Gross, Holmes, and Billroth, who are well known all over the world, and whose opinions are certainly worthy of consideration. He had performed tracheotomy over 100 times (about 110 in all), and, in addition, had seen it done at least fifty times by others. He had met with almost every complication that could exist, and he had seen all sorts of medical men take a trial at the operation. He thought he had saved some lives by assisting inexperienced operators, but he had also seen a number of patients die on the table.

He believed that tracheotomy for croup in young children was one of the most dangerous operations in surgery. In this position he had the endorsement of Gross, Holmes, and Jacobi, and he believed that it was the prevalent opinion among the surgeons of this city. As to the dangers, he had a record of ten cases in which death took place on the table. In four of them the operation was performed by men of marked surgical ability, and in one the internal jugular vein was punctured by one of the best surgeons that New York ever had. It had been remarked that it was a simple thing to plunge a knife into the trachea, but he had known of two or three such attempted plunges, which were most disastrous in their consequences. Thus, in one instance the knife was plunged into the spinal cord, and in another into the oesophagus, while in a third it entered the side of the trachea and went through. It is, indeed, often very difficult to get into the trachea in the median line.

In speaking of the objections to early operation, he remarked (as he said he had often had occasion to do before) that the men who operated early had the greatest success, not for the reasons that Dr. Winters gave, but because those done early were usually *unnecessary*.

operations. Within the last year he had seen ten cases of croup recover without tracheotomy. It was often difficult to differentiate between cases of croup and those of catarrhal laryngitis, which generally get well without the operation. In the diagnosis of the latter it would be proved, as a rule, that expiration was free, and only the inspiration embarrassed. There was a certain number of cases of diphtheritic croup which would get well without tracheotomy, and this accounted for the number of *specifics* for croup of which we heard so much. Moistened air was all that was required for many of the cases, and some of them would recover without any treatment whatever. In every case of the disease, however, he advocated the closest watching.

Among the most prominent causes of death in late operations had been mentioned pneumonia and infiltration of the lungs. If any fact had been demonstrated in medical science it was that stenosis of the larynx, trachea, or bronchi, which was not complete, gave rise not to congestion but to anæmia of the lungs. This fact could readily be substantiated during life by means of physical diagnosis, percussion over the lungs showing exaggerated resonance, instead of the dulness of congestion. The same effect was produced as if a tumor were pressing on the air-passages, and acute emphysema resulted from the attempt of the air vesicles to fill up the threatened vacuum. What would be found after death would be not broncho-pneumonia, but hyperdilatation of the air vesicles, similar to that met with in asthma; in addition, considerable areas of collapsed lung tissue. Dr. Maxwell had recently told him of a case which terminated fatally at Randall's Island, in which the membranes extended to almost the third bifurcation of the bronchi. There was not a sign of pneumonia, but there were two or three such areas of collapsed lung tissue. He had himself seen about twenty autopsies after tracheotomy, and in not a single one of them was there any pneumonia present. The most common cause of death after the operation was *bronchial* croup. In more than half of those which he had seen, the membranes extended as far as the four or fifth bifurcation of the bronchi, the patient necessarily dying of suffocation long before the air vesicles could be reached by the exudation. The three principal causes of death were bronchial croup, nephritis with uræmic poisoning, and respiratory or cardiac paralysis, or both combined. Which of these, he should like to know, would Dr. Winters attribute to delay in operating? He believed that an inexperienced man should call in an experienced one to assist him in performing tracheotomy, so as to afford the patient the best possible chances of recovery; but the trouble was that in a vast number of instances the disease went on after the operation, and death was exceedingly apt to occur from bronchial croup.

DR. WINTERS said, in reply, that it was a misconception to suppose that he had spoken of the entrance of blood into the trachea as a matter of no consequence. Properly performed, however, tracheotomy was an almost absolutely bloodless operation, and he had himself done it with a loss of not more than thirty drops of blood. After the integument had been divided the scalpel was to be laid aside, and a careful dissection of the tissues until the trachea was reached made with the forceps or the end of a pair of scissors. If very tense

fascia was encountered, it should be taken up on the director and divided, preferably with dull scissors. As to the idea of Dr. Jacobi, that capillary, bronchitis or broncho-pneumonia was caused by blood getting into the trachea and making its way down into the bronchial tubes; this had been originally suggested by Niemeyer, but it had been long since exploded, and Niemeyer himself had abandoned it before his death. It was, of course, possible for a greater or less quantity of blood to get into the trachea during the operation, but if it, or any accumulation of mucus, was allowed to remain there the operator was wholly responsible for it. A tracheotomy was never complete until the trachea had been rendered perfectly clean. In regard to anæsthetics, he did not suppose that anybody at the present day ever thought of performing the operation without their use, unless under very exceptional circumstances; and he quite agreed with Dr. Jacobi that chloroform was decidedly preferable to ether, which, in addition to requiring more time for its action, was itself an irritant to the larynx.

He did not believe at all in the action of bichloride of mercury as a germicide or antifermentative when taken internally, since it was not possible to get a sufficient quantity of it for this purpose into the blood. It was eliminated as rapidly as it was taken into the system, and if by any chance it should accumulate to a small extent, it would be gotten rid of by vomiting or purging, so that not more than one-fiftieth of a grain could at any one time be brought in contact with the four pounds of blood in the body of a young child. It had no other action, he thought, than that of a simple tonic; its effect (when its administration was not kept up too long) being precisely that of iron in increasing the number of red corpuscles in the blood. Its effect in resolving fibrinous exudations was, therefore, not greater than that of any other salt of mercury. When membranes were found to any extent in the bronchi, he believed that they always existed there before the operation had been performed, for in such cases death always took place within too short a time after tracheotomy to permit of such an extension of the exudation below its seat.

It seemed to him that Dr. Ripley confounded the dangers of the operation with those of the disease, and he still maintained that the operation itself, performed with care, was not dangerous. Any man who was fit to be a general practitioner certainly could, if called upon, perform tracheotomy, and with perfect safety, in a young child with a short, thick neck.

When death occurred on the table, it was not due to the operation, unless the latter was performed with haste and carelessness, but always to a continuance of the disease, or to the late resort to operation. Dr. Ripley had claimed that, when performed early, tracheotomy in many cases was not necessary. This involved the question of diagnosis, and he believed that the family physician was better qualified to decide this than a surgeon specially called in. In the paper he had laid emphasis on the point that, as long as expiration remained free, there could be no pseudo-membrane present; but nothing else but this would produce labored expiration in connection with the whispering voice. Dr. Ripley's statements, in regard to congestion of the lungs, would not, he thought, bear close examination.

Passive congestion of these organs was undoubtedly occasioned by laryngeal stenosis, and croup and asthenia were not at all analogous.

#### NEW YORK SURGICAL SOCIETY.

*Stated Meeting, November 25, 1884.*

THE PRESIDENT, ROBERT F. WEIR, M.D.,  
IN THE CHAIR.

#### LEUKÆMIC LYMPHOMATA.

DR. C. K. BRIDDON presented a patient from the Presbyterian Hospital for the purpose of illustrating a disease which, he thought, it was impossible to distinguish from malignant lymphoma—the subject of the paper of the evening—except by examination of the blood. A married woman, twenty-three years of age, showed extensive enlargement of the cervical lymphatic glands on both sides, the disease having existed for nine months. The glands in the right axilla also were enlarged, but enlargement of the glands elsewhere had not been detected. There was some enlargement of the spleen. Examination of the blood revealed a large increase in the proportion of the white blood-corpuscles. The enlargement of the glands affected first one side of the neck and then the other. Dr. Briddon thought that most German authorities recognized the fact that it was impossible to distinguish the soft variety of malignant lymphoma from the leukæmic lymphoma, except by examination of the blood.

The treatment consisted of the administration of Fowler's solution in gradually increasing doses, beginning with three drops. The patient had not been under observation a sufficient length of time to secure the full influence of the remedy.

#### EXCISION OF THE ENTIRE TARSUS FOR TUBERCULAR OSTEITIS.

DR. W. T. BULL presented a patient upon whom he operated, more than six months ago, for tubercular osteitis of the bones of the tarsus, and removed the entire tarsus, with the exception of the posterior rim of the os calcis—the compact tissue of the bone. The result had not been very satisfactory. The patient was an Italian, twenty-two years of age, without constitutional vice. He entered the hospital on the 17th of last March, when he gave a history of having suffered from stiffness, swelling, and pain in the ankle for fifteen months, which finally broke out into sinuses, and the disease completely disabled him. On examination, there was found carious bone. The general condition of the patient was very good, and there was no evidence of tubercular deposit in any other part of the body. He was anxious to have the foot amputated, but Dr. Bull thought he might be benefited by conservative surgery, and therefore operated in the manner indicated. The wound healed satisfactorily, so far as general symptoms were concerned, under peat and iodoform dressings, and the application of plaster-of-Paris splints. At the end of four months, however, the discharge continuing, Dr. Bull scraped out the sinuses, and in about one month after this operation they were all healed. Since then they have broken out once or twice, but are now healed. He could bear weight on

the foot at the end of three months, but with pain. At present the limb is one inch shorter than the other, the calf of the leg smaller by two inches, and the circumference of the instep less by three-fourths of an inch, and the heel broader by one inch than the opposite heel. The foot is in good position, and there is considerable flexion and extension of the metatarsus.

The patient walks with a slight limp, upon a thick-soled shoe. He is working in a grocery store, but has pain enough at times to interfere with his work. It should be remembered that there was left behind a thin shell of the os calcis, through which the drainage-tube passed, and the continuance of the pain might be explained by inflammation in this bone. It was possible that the functions of the foot might improve, as the man had had a proper shoe but a few days. Judging from the present condition, he should be compelled to think that amputation at the ankle-joint would have been a more rapid means of cure, and one that would have given, with a good artificial foot, better facility in walking. But the man was hardly in a position to provide himself with that luxury. Dr. Conner, of Cincinnati, reported last year to the American Surgical Association two very favorable results after complete excision, and Dr. Bull had been stimulated, by a perusal of his very thorough paper on the subject, to try conservatism in preference to amputation.

Dr. Bull referred to another case—that of a married woman, twenty-five years of age, who had about the same condition of the tarsus, but there was, besides, evidence of disease of the tibia and fibula. He removed not only the bones of the tarsus, but sawed off the lower ends of the tibia and fibula, yet the patient was never able to walk at all except by the aid of artificial support, and the limb was finally amputated.

He thought that the testimony afforded by these two cases was certainly not very satisfactory with regard to extensive resection of the bones of the tarsus.

DR. A. POST said that he saw Dr. Connor's patients in Cincinnati, and, as he remembered, the entire tarsus was removed, and the patients, after the lapse of several years, walked very well, although there was, of course, considerable shortening of the feet.

#### TWO CASES OF FALSE JOINT (ESMARCH'S OPERATION) FOR ANKYLOSIS OF THE JAW.

DR. WEIR presented two cases in which Esmarch's operation had been performed for the establishment of a false joint in the lower jaw on account of ankylosis. The first patient was a woman, thirty-three years of age, who, ten years ago, while cleaning windows, fell, striking her chin and the left side of the face on an iron bar. Much swelling followed, causing, at first, difficulty in closing the jaws, and subsequently, inability to open them. At the end of a year she was compelled to subsist on fluid diet. In September, 1878, she entered St. Vincent's Hospital, where the cicatricial bands were divided and separated freely from the jaws and the mouth forcibly opened. In spite of wedges subsequently used, recontraction took place, as is commonly observed. In May, 1879, at Bellevue Hospital, the cheek was split open from the mouth, the bands cut out, and the mucous membrane brought over the gaps. As a great deal of neuralgic pain was experienced after this, another section of the cheek was made in March,

1880, without benefit. When she came under Dr. Weir's charge the separation of the jaws amounted to one-quarter of an inch, with several strong internal bands stretching from one jaw to the other from the angle of the mouth outwards. A slight motion was perceived. The cicatrix in the cheek ran nearly to the posterior margin of the masseter, and was at its posterior part exquisitely sensitive, and was the focus of severe and constant neuralgic pain. On January 29, 1883, by an incision over the lower edge of the bone, an inch and a quarter of the left side of the lower jaw was removed, starting from the second bicuspid tooth of that side, and purposely leaving a slender cicatricial band attached to the mental end of the maxilla to act as a ligament for support, the painful cicatrix was dissected out. Complete relief followed the operation, and she was able to masticate readily within a week therefrom. Three months later a return of pain was felt in the mouth, supposed, at first, to be due to some carious teeth in the upper jaw, which were removed. It was, however, found to be due to the pressure of the distal end of the inferior maxilla from the persistent action of the pterygoid muscles. This portion of bone was eventually removed, and the patient has since been free from pain and able to eat well. It is now more than three years since the final operation and the jaws open to a normal width, and, thanks to the cicatricial band which was preserved, the chin keeps its median position.

Dr. Weir's second case was a boy of sixteen, who was admitted to the New York Hospital in October, 1882, having, nine years previously, received a lacerated wound over the left temporo-maxillary articulation, which resulted in obliteration of all motion in this joint. He had had, two years previously, his jaw opened under an anæsthetic by screws and forceps, but the relapse was speedy. Dr. Weir, under ether, removed a wedge-shaped piece of the lower jaw by an external incision from the second bicuspid tooth outward. The piece of bone removed measured one-half inch along its upper and three-quarters of an inch along its lower border, and gave perfect freedom of motion. On the third day he was able freely to move the jaw. The opening of the mouth is now normal as to extent, though there is slight underlapping of the lower incisors. Lateral mastication is perfect.

DR. LITTLE referred to a case in St. Luke's Hospital, in which, in 1863, he performed excision of the jaw for ankylosis. He watched the patient, had seen her within a year, and she continued to have perfect use of the jaw the same as she did when she left the hospital.

DR. PILCHER, in connection with the first patient presented by Dr. Weir, reported a method which he adopted in the case of a little child, four years of age, whose jaws were locked together firmly, as a result of cicatrices produced by extensive ptalism some years previously. There was a dense cicatricial mass which extended from opposite the canine teeth backward to beyond the molars, fastening the jaws together. Dr. Pilcher operated by making an incision from the angle of the mouth outward until he had divided freely the entire mass. He then dissected up the cicatricial tissue from the jaw, both above and below, and excised it. He then took a flap from the mucous surface of the upper lip, and, having turned it backward, planted it upon the surface exposed along the upper jaw as the result of ex-

secting the cicatricial mass, and fastened it in position with sutures. He treated the lower lip in the same way, taking a flap from the lower lip and turning it back, and planting it upon the freshly exposed surface. He then brought the cheek together in such a manner that the edges of the mucous membrane of the flap above and below were nearly in apposition, and as a result of it he had a new mucous surface filling the space from which he had removed the cicatricial mass. There was promise of considerable relief of the original contraction. Most excellent union had taken place. It was perhaps a month since the operation was performed, and the child's condition was very satisfactory. The amount of recontraction which may take place is, of course, an uncertain quantity, but it had seemed to him that, with watchfulness and daily separation of the jaws, any slight tendency to recontraction due to cicatricial tissue which may have been left in the excision, may be prevented. He mentioned it as possibly a method which might take the place of resection of the jaw.

DR. LEWIS S. PILCHER reported

#### TWO CASES OF MALIGNANT LYMPHOMA, WITH REMARKS.

*Case 1.*—Peter H., aged thirty-seven years, a native of Sweden, cabinetmaker by occupation, of robust physique, first consulted me in the early part of November, 1880, in consequence of a large tumor occupying the right side of the neck. It had first been noticed by him less than a year previous to this date. It had developed rapidly, and now extended from the margin of the inferior jaw downward two-thirds of the way to the clavicle, and from the mastoid process forward to the median line of the neck, being bound down by the sterno-cleido-mastoid muscle, pushing the larynx over to the left of the median line, at times producing embarrassment of respiration, and difficulty in deglutition. I removed the tumor, which was composed of a series of enlarged glands, on the 13th of November. Microscopic examination, as made by Dr. N. B. Sizer, revealed simply hyperplasia of preexisting glandular tissue. The recovery from the operation was rapid and complete, and the man returned to his vocation, as before.

At the end of two years, in the fall of 1882, he again consulted me on account of an enlargement of the inferior inguinal glands of the left side, which he believed to have been excited by the frequent pressure against the corner of his workbench to which they were constantly subjected while he was at work. This enlargement of these glands rapidly increased, so that by the first of the year 1883 the tumor seriously interfered with his locomotion. A marked impairment of his general health had also now become evident.

On the 27th of January, 1883, I removed this inguinal tumor, including, also, in the enucleation one of the external iliac glands; this was easily accomplished by prolonging the incision upwards and outwards in a curved direction upon the abdominal wall, and incising the deeper parts as for ligation of the external iliac artery. Union by first intention was secured throughout the operation wound, but the convalescence was protracted by attacks of severe pain in the abdomen; these were most severe at night; were not caused by, nor accompanied with, tympanitis; nevertheless, during the third week after the operation he was able to walk

without fatigue or discomfort from his residence to my office, a distance of one mile.

During the next three months the pain in the abdomen became more marked and continuous, requiring the daily use of morphine to render existence tolerable. A tumor could now be detected within the abdomen, situated over and to the left of the lumbar vertebrae, and evidently formed by enlarged retroperitoneal lumbar glands.

Three months later the right inguinal glands had become so enlarged that they formed a tumor of some size. In the neck, likewise, on the side originally affected, below the mastoid process, at the angle of the jaw, and along the anterior border of the trapezius muscle, enlarged glands were visible. The patient was very desirous that these should be removed, and, at his earnest solicitation, both groups of enlarged glands were extirpated. This was done August 3, 1883. Union by first intention was secured in both localities, notwithstanding the cachectic condition of the patient.

Six weeks later a line of enlarged glands could be detected along the margin of the true pelvis on both sides.

Ten days later, September 27, 1883, my last examination of him was made. His anæmia, as evinced by pallor and increasing weakness, had become great. There was some œdema of face, most noticeable mornings, and marked œdema of the outer side of the left thigh and of the scrotum. Examination of urine gave negative results. There was no great, appreciable enlargement of the spleen. He suffered much from abdominal pain, requiring increased amounts of morphine for its control. He walked with difficulty. A few days later he sailed for Sweden, his native country, where after a few weeks' suffering, he died by exhaustion December 6, 1883.

From the first appreciation of any glandular enlargement to the time of death, about four years elapsed. This time is divisible into three periods:

1. A period of primary localized glandular disturbance extending over one year, and brought to an end by the first operation.

2. A period of quiescence of about two years. During this period the general health remained fair. He worked regularly at his trade, and supported his family, but yet it was with more effort and with less ability to endure than had been his former wont. There had taken place a very appreciable permanent impairment of his general strength.

3. A period of progressive anæmia, with diffuse glandular disturbance, extending through one year, and ending in death.

The chief medicinal agents that were used in the course of this case, in addition to the morphia already mentioned, were preparations of iron and of arsenic, but no advantage could be discovered to be derived from them at any time.

*Case II.*—J. R. T., aged twelve and a half years, a bright, studious, but somewhat delicate, lad, whose father had died of laryngeal and pulmonary phthisis, and whose maternal grandmother had died of cancer of the breast. For a number of weeks the boy had been noticed to be somewhat languid, and in his general bearing otherwise to evince depression. One of the most noticeable signs of this consisted in a stiffness of

the neck with which he would frequently find himself affected on rising in the morning. Following upon this history he developed a croupy cough, which was most noticeable at night. This being considered as the result merely of a passing cold, was for a week or more treated by confinement to the house and by simple domestic remedies. Nevertheless, the cough became more continuous and paroxysms of severe dyspnea had begun to occur at intervals, when I first was called to see him, on the 30th of January, 1882. His condition was then similar, in general, to that manifested in the earlier period of a severe attack of catarrhal laryngitis, presenting fever, loss of voice, painful, dry, frequent, smothered cough, differing in this one respect of its muffled character from the harsher and more resonant cough of laryngitis; breathing somewhat labored and accelerated, with occasional exacerbations of the dyspnea. But, in addition, the gums were swollen and spongy, and the tonsils and the submaxillary glands were enlarged.

The remedies usually efficient for the relief of catarrhal laryngitis were used during the first week of my attendance without benefit, beyond the alleviation caused by opiates. Meanwhile the swelling of the gums continued to become more marked, until they rose above the level of the teeth and began to break down into spots of ulceration at many points.

The same ulcerative process began to manifest itself in the tonsils likewise, and the pain on swallowing and on coughing was such as to indicate that the larynx was also the subject of ulceration. The conditions of the mouth and fauces were such as to make laryngoscopic examinations out of the question. Now, for the first time, a general enlargement of all the lymphatic glands of the neck was noticed. These enlarged glands were not tender, nor was any one gland or set of glands greatly enlarged, the size of a hazel-nut, perhaps, being about that apparently presented by these glands. The general involvement of all these glands on both sides of the neck was such as to preclude the theory that these enlargements were due to the propagation of infection from the mouth or fauces, and to awaken in my mind the conviction that they were the expression of some general blood-infection. While, therefore, the local troubles of the mouth and larynx were treated by stimulating and detergent gargles, and by insufflations of iodoform, especial attention was directed toward antagonizing the evident general blood-dyscrasia. For this purpose, iodide of iron, cod-liver oil, and alcoholic stimulants were used. No effect upon the progressive march of the disease resulted from the remedies used. The ulcers in the mouth and fauces extended; the difficulty of swallowing increased; the croupy cough persisted, and was most harassing, while the labor of respiration was always marked. The condition of the glands remained unchanged, while pallor of skin and progressive debility marked the increasing impoverishment of the blood. No examination was made as to the condition of the spleen.

By the middle of the third week of my attendance the growing failure of the child's strength had reached such a degree that the gravest apprehensions as to a speedy fatal result were unavoidable. To what extent the undermining of the general powers might be due to the prolonged laborious respiration, and to the suffer-

ings caused by the functional activity of the swollen and ulcerated larynx, could not be positively estimated, but, inasmuch as there was a possibility that the chief cause of the dyspnoea might be laryngeal obstruction, and nothing but good could come from diverting the respiratory current for a time from the larynx, I opened the trachea below the thyroid isthmus. This was done on the seventeenth day after the lad came under my observation. The operation was attended by persistent capillary oozing from the surfaces exposed by the incisions. This was finally controlled by uniting the edges of the tracheal incision and the skin incision on either side by sutures, thus accomplishing continuous pressure upon the raw surfaces. Only partial relief to the dyspnoea was afforded by the operation. Though the child rallied fairly after the operation, the breathing became rapid and shallow after a few hours, and he died quietly by asthenia fourteen hours after the operation. No post-mortem examination.

It is greatly to be regretted that the light which a post-mortem examination might have shed upon this obscure case was not obtained. I have but little hesitation, however, in classing it as a case of malignant lymphoma. The effect of the tracheotomy was to demonstrate the intrathoracic location of the respiratory obstruction. The frequency with which dyspnoea and cough are produced by the pressure of enlarged thoracic glands has long been recognized. Pressure on the recurrent laryngeal nerve may also have contributed to the spasmodic croupy attacks. The date at which the bronchial and other thoracic glands may have first begun to enlarge must remain uncertain, as a variable period may have been required to enable them to reach that stage at which obstructive and irritative symptoms ultimately produced by them declared themselves. In the history of the case it was noted that a sudden and general enlargement of the glands of the neck took place. That some enlargement of these glands had not existed prior to the date of their discovery I would not assert; the peculiarity and interest attaching to them lie in the fact that so many of them, and these so widely diffused, were all at once noticed to have become enlarged, without being either painful or tender.

The early prominence of the stomatitis in this case is of interest in connection with the statistics of Gowers, in *Reynold's System of Medicine* (1870, v. 329, Art. Hodgkin's Disease), where, in analyzing a group of cases in which the first symptoms depended, not on the glandular enlargement, but on the accompanying blood state, the statement is made that in two of these stomatitis was the earliest symptom. The appearance of the swollen gums in this case was unlike anything else I have ever witnessed. They formed a dull, livid, spongy ruffle, in which the teeth were set, giving the impression to the eye of tissue having a low grade of vitality, so that the melting down at points into complete necrosis was quite in keeping.

The two cases which have been detailed, present the two extremes of chronicity on the one hand, and of acuteness on the other, that may be manifested by malignant lymphoma. A period of four years is far beyond the average time which intervenes between the first glandular enlargements and the final fatal termination, while a period of but little more than four weeks is quite unparalleled by any recorded cases of which

I have been able to find mention. They both, however, present clearly marked these essential features: a progressive blood-deterioration, advancing steadily to a fatal termination, unaffected by remedies, and diffused, non-inflammatory glandular enlargements.

The differences of the accidents of the disease in these two cases were not greater than are often witnessed in other diseases which are recognized as being essentially of identical nature; as, for instance, tubercular disease of bone and of the meninges of the brain.

As to the etiology of malignant lymphoma, reflection upon the phenomena which attend its course leads me to put forth the hypothesis that the essential cause of the disease is a specific infecting microorganism, upon the growth and activity of which the blood-changes and the lymphatic glandular enlargements depend. The intensity and rapidity of the development of the primary symptoms must depend on many things, and especially upon the original resisting power of the individual. Upon the special group of glands that may be first, or most largely implicated in the localized gland-infection, will depend also many of the peculiar accidents of each case.

If, as is not improbable, each affected gland is, in turn, a new focus of active germ proliferation from which an increased dissemination of the special poisonous element is taking place, the early and repeated extirpation of the affected glands would be a rational procedure, but this only as an accessory measure to those more general germicidal or antiseptic measures that might help to purify the blood stream itself, if any such can be found.

DR. H. B. SANDS thought that, in the absence of any histological information, in one of Dr. Pilcher's cases, concerning the nature of the morbid growth, and in view of the striking difference in the clinical history of the two cases, there might be a reasonable doubt whether in both the character of the disease was identical. As he understood the term malignant lymphoma, it did not imply a peculiar abnormal structure, as is observed in carcinoma and sarcoma. The malignancy of the disease is characterized by its wide dissemination, and by the appearance of hyperplastic glandular tissue in some parts of the body where normally no lymphatic glands exist. He thought, therefore, it was fair to inquire whether the first of Dr. Pilcher's cases may not have been one of multiple lymphoma, and the second one of lympho-sarcoma, which is a truly malignant affection, characterized by much more rapid progress than is usually observed in cases of multiple or malignant lymphoma.

DR. PILCHER said that he had attached the word malignant to these cases rather with reference to the steady progress of the disease toward a fatal termination, without being affected in its course by remedies. The peculiarity of the cases called malignant lymphoma consisted in these glandular enlargements, in which nothing more was found than normal gland tissue, fibrous and cellular elements, hyperplasia of the ordinary gland tissue. The second case which he had detailed, he had reported with the special hope that it might be criticised because of its obscurity, and it was only by association with the various symptoms and conditions present that he was able to reach any satisfactory conclusion concerning its exact nature.

DR. BRIDDON thought the term malignant lymphoma had been attached to the disease, not so much on account of the histological elements present, as on account of the inveterate character of the affection clinically. He had never seen a case in which the disease ran its course in three or four weeks, and he should look upon the second case reported by Dr. Pilcher as one of glandular enlargement, secondary to ulcerative process going on in the buccal cavity.

#### PHILADELPHIA ACADEMY OF SURGERY.

*Stated Meeting, November 3, 1884.*

THE PRESIDENT, DR. D. HAYES AGNEW,  
IN THE CHAIR.

DR. CHARLES NANCREDE exhibited a typical specimen of

#### PERINUCLEAR ABSCESS AROUND THE OSSEOUS NUCLEUS OF THE ASTRAGALUS,

removed from a child five years of age, who presented the ordinary symptoms of strumous osteitis of the bones of the foot, but there was nothing to indicate which bone was affected. There was lameness and gradual swelling over the calcaneo-astragaloïd joint. The darting pains developed very early, showing, if an abscess were present, it must be very near the ankle-joint. The joint itself was not involved. About ten days before he operated, there was a severe chill, high fever, and sudden swelling of the ankle-joint, repeated chill, and the child was evidently very sick. Ten days later he operated and found the calcaneo-astragaloïd joint involved and a perforation into the ankle-joint. He removed the whole astragalus and found a perinuclear abscess. There was only a small patch of inflammation on the ankle-joint, the appearance of which would indicate that it had developed since the rupture of the abscess.

The operation was done about a week ago. There were no unfavorable symptoms, and there is now nothing but a superficial line of granulation.

The PRESIDENT asked, What would be the effect of gouging in cases of this kind?

DR. NANCREDE said he did not gouge, because the ankle-joint was opened and ankylosis would have been the result, and that was all that could be obtained by excision. By gouging we could not be certain when we reached healthy bone, convalescence would have been slow and suppuration prolonged, while the result would have been the same. After gouging, the limb might have been a shade longer, but he questioned whether the result would have been any better. The cases which he had seen had been in a wretched condition; in some he had tried temporizing, but in these instances the patients died, but where thorough excision has been practised they have done well.

DR. KEEN made the following remarks upon a case of

#### AZOOSPERMISM

which came under his observation:

A gentleman, from Massachusetts, consulted me the other day on account of having no family. He is 40 years of age, and has been twice married. He is perfectly temperate, and has never had gonorrhœa or other genito-urinary trouble. The sexual feelings are

very strong. The sexual organs were normally developed as far as could be determined from an external and rectal examination.

He had been married for the second time over a year ago, but in neither case had the wife become pregnant. In regard to the seminal fluid, he stated that in amount it was about a drachm; that it was glutinous, with more or less large masses of glutinous matter at the time of ejaculation. The specimen which the patient brought, about two hours after ejaculation, was thin and watery. Dr. Keen examined it very carefully under the microscope, and found a large quantity of granular débris, with a complete absence of spermatozoids. He had never had mumps, and the testicles were well developed. Dr. Keen had seen a number of cases of azoospermism following disease of the testicles, and the atrophy resulting from the metastasis of mumps, but he had never before seen a case of azoospermism in which the sexual apparatus and sexual appetite were so near normal.

DR. S. W. GROSS had seen several cases of azoospermism in which the history was very similar to that of the case described by Dr. Keen. The genital organs were healthy, and there had been no orchitis, no epididymitis—in fact, no affection of the genital organs. In all these cases, however, he found that the men indulged immoderately in sexual intercourse. It is a well-known fact, that the more frequently intercourse takes place, the fewer are the spermatozoids.

DR. KEEN had inquired as to the sexual habits before and after the first marriage. He had not, with the exception of a brief time, practised self-abuse. After his first marriage, his sexual relations were moderately frequent, but they were never immoderate.

### CORRESPONDENCE.

#### CYSTIC DEGENERATION OF THE CHORION.

*To the Editor of THE MEDICAL NEWS.*

SIR: I was much interested in the report, contained in THE NEWS of the 8th inst., of a paper read by Dr. F. O. Marsh before the Cincinnati Medical Society, on "Cystic Degeneration of the Chorion." I say "much interested," because, in a practice of over sixteen years, I had my first case of *vesicular* mole about four months ago, although I have had three cases of *fleshy* mole.

As it would appear from the paper referred to, and the discussion thereon, that there is not yet a plethora of *data* upon this interesting subject, perhaps a brief report of my case may not be considered unworthy of a place in your valuable journal.

Mrs. P., 36 years old, married eighteen years, mother of seven children, the youngest being four years old, has always been a remarkably healthy woman. Menstruated regularly in May last, skipped the period in June, and "came round all right" in July, to use her own expression. The flow did not cease, however, as usual, but continued for two weeks, and becoming suddenly worse, I was summoned in haste. The flooding was excessive. I was shown a piece of membrane  $\frac{1}{4}$  by  $1\frac{1}{2}$  inch, which I was assured was the only thing expelled except clots, which I had no opportunity of examining. I was unable to introduce my finger within the uterus, and before leaving her I therefore placed a

tampon in the vagina. The tampon was replaced twice before I could succeed in hooking my index finger around the mass within the uterus, which proved to be a bunch containing four cysts. There was no further hemorrhage, and no symptom of septicæmia, against which antiseptic precautions were taken at each removal of the tampon.

I would emphasize the following points of interest in this case for comparison with those brought out in Dr. Marsh's paper:

1. Absence of "strong emotional disturbance," of which I am thoroughly satisfied. 2. Absence of vomiting. 3. Absence of symptoms of uræmia. The urine was not tested, however. 4. Absence of any abnormal distention of the uterine cavity. It is possible other cysts were expelled before I saw her, but the attendants say not. 5. The brief period of gestation—probably not exceeding eight weeks.

F. W. BORDEN, M.D.

CANNING, NOVA SCOTIA,  
Nov. 29, 1884.

## NEWS ITEMS.

### WASHINGTON.

(From our Special Correspondent.)

**AMERICAN PUBLIC HEALTH ASSOCIATION.**—The executive committee of the American Public Health Association, which was appointed at the annual meeting held in St. Louis in October last, met last week at the Ebbitt House, Washington, D.C., the chairman, Dr. Reeves (president of the Association) presiding, and Dr. Irving A. Walton, secretary. Eleven members of the committee were present.

Arrangements were completed for the thirteenth annual meeting of the Association, which will be held at Washington, D.C., the second Tuesday in December, 1885, and a local committee was appointed, with Dr. Smith Townshend as chairman.

Subjects were selected for competition for the Lomb prize essays as follows: 1. "Healthy homes and food for working classes;" 2. "Sanitary necessities and conditions of school life;" 3. "Disinfectants;" 4. "Life-saving appliances in certain occupations." The full text of the subjects as they are to be treated will be published at an early date. These essays are for prizes of \$500 each, and the competition is not confined to members of the Association, but is open to all citizens of the United States.

The committee on disinfectants, consisting of Major George M. Sternberg, U.S.A.; Dr. J. H. Raymond, of Brooklyn; and Dr. George H. Rohe, of Baltimore, was authorized to prepare a preliminary report as soon as possible for publication, in view of the anticipated advent of cholera next year. It was decided to incorporate the Association at Washington, D.C., under the United States laws relating to the District of Columbia. The committee adjourned to meet in New Orleans next April.

### CANADA.

(From our Special Correspondent.)

**AMENDMENT OF THE ONTARIO MEDICAL ACT.**—The following are the most important of the proposed amendments of the Ontario Medical Act:

To provide for the proper payment of medical witnesses.

Actions for malpractice not to be introduced after one year from date of alleged malpractice; and the plaintiff to give security for costs.

The appointment of a taxing officer, who shall be a medical man, for all medical accounts in dispute in his district.

The adoption of a Code of Ethics by the College of Physicians and Surgeons of Ontario. The Council to have power to erase from register the names of individuals who violate the Code.

**APPOINTMENT OF UNITED STATES INSPECTOR AT PARIS.**—The Vice-Consul General at Paris, in a dispatch, states that, pursuant to instructions, he has appointed Dr. Warren Bey as Medical Inspector to aid in discovering the departure of refugees or their baggage for the United States. Dr. Warren Bey generously offers to make no charges for his services.

**HEALTH OF CUBA.**—Dr. D. M. Burgess, Sanitary Inspector, Marine Hospital Service, in his report to the Surgeon-General, dated the 4th inst., states that there were five hundred and seventy-six deaths in Havana during the month of November. There were nine deaths from yellow fever, all occurring among private persons or sailors.

Previous to the past two months, the city garbage (basura) had been taken nightly to a railroad in the suburbs, and by freight cars carried about forty miles into the country, and there used to enrich the soil of worn-out sugar estates; but since that time it is dumped in fields not outside of the city limits, and scarcely a mile from the centre of the city. It there emits a most offensive and sickening odor; and as these fields are on either side of the road which goes to the city cemetery, thousands of persons are obliged to inhale it. It is noticeable that since the garbage has been disposed of in this manner, flies have enormously increased in number.

**SURGEON P. H. BAILHACHE.**—Marine Hospital Service, in charge of the Purveying Division in Washington for the past five years, has been ordered to Philadelphia for duty.

**PROF. GRAWITZ.**—We learn that Prof. Grawitz has declined the appointment of Professor of Pathological Anatomy in Bellevue Hospital Medical College, and that he has just been elected Professor of Pathology at Greifswald.

**A BILL TO ESTABLISH A NATIONAL BOARD OF HEALTH.**—The following bill has been prepared by a Committee of the Conference of State Boards of Health in session in Washington last week:

A bill to amend an Act entitled "An act to prevent the introduction of contagious and infectious diseases into the United States, and to establish a National Board of Health."

Be it enacted, by the Senate and House of Representatives of the United States of America in Congress assembled, that an Act entitled, "An Act to prevent the introduction of contagious and infectious diseases

into the United States, and to establish a National Board of Health," approved March 3, 1879, be so amended as to provide that there shall be established a National Board of Health, to consist of one member from each State Board of Health now established, or which may be hereafter established in the United States, to be appointed by the President and confirmed by the Senate, whose compensation, when actually engaged in the performance of duty under this act, shall be ten dollars per diem each, and reasonable expenses. This board shall meet in Washington within ninety days after the passage of this act, and shall meet in Washington annually, and in case of emergency upon the call of its chairman and secretary, or upon the extraordinary call of the President of the United States, as hereinafter provided.

The officers of this board shall be a chairman and secretary. The secretary shall be the executive officer of and *ex-officio* a member of the board, and shall devote his entire time to the duties of the office, and may be removed for cause, at any regular meeting of the board, two-thirds of the full board voting therefor, and shall receive such salary as may be determined by the board. The chairman, with six other members, representing the various geographical divisions of the country, shall constitute the executive committee of the board, to be elected at the first meeting of the board, and at each annual meeting thereafter; and said committee shall, and is hereby authorized to, exercise such powers as may, from time to time, be conferred upon it by the board.

SECTION 2. The duties of this board shall be, and it is hereby authorized and given power, to make or cause to be made such investigations, at any place within the United States, or at any foreign port or place, and to collect information upon all matters relating to the public health, and to frame such rules and regulations as may be necessary for the government of the quarantine service of the United States; and all the power and authority now provided by law, or which may be provided by law, for the control and protection of the public health of the United States, shall be and are hereby vested in said board, except as to the special authority vested in the President of the United States under the provisions of this act. The rules and regulations of this board shall severally be executed, under the direction of this board, through such departments of the Government, or other officers, as the law may prescribe or the President may designate.

This board shall coöperate with and, so far as it lawfully may, shall aid State and local boards of health in the enforcement of the rules and regulations of such boards, to prevent the introduction of contagious and infectious diseases from foreign countries into the United States, and into one State from another.

SECTION 3. It shall be the duty of this board to make such rules and regulations as are necessary to be observed by vessels at ports of departure, where such vessels sail from any foreign port or place to any port or place in the United States to secure the best sanitary condition of such vessel, her cargo, passengers, and crew, and to prepare from time to time for the consular officers of the United States, and for the medical officers serving under this act at any foreign port, and otherwise make publicly known such rules and regula-

tions which, when approved by the President and issued by the Department of State, and posted in the office of the consul or other representatives of the United States at such foreign ports for at least ten days, shall be enforced by the consular officers and agents of the United States.

SECTION 4. It shall be unlawful for any vessel from any foreign port or place to enter any port in the United States, except in accordance with the rules and regulations made in pursuance of this act, and of the rules and regulations made under State or municipal authority; and any such vessel which shall attempt to enter any port of the United States in violation thereof shall be liable to process in the proper district court of the United States, and, upon conviction, shall forfeit to the United States a sum, to be awarded in the discretion of the court, not exceeding \$1000, which shall be a lien upon such vessel to be recovered, upon proceeding in the proper district court of the United States, in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws, and in all such cases the United States Attorney for such district shall appear on behalf of the United States; and all such vessels shall obtain, from the consular or authorized medical officer at the port of departure, a certificate in duplicate setting forth the sanitary history of said vessel, and that it has in all respects complied with the rules and regulations of this board, made in pursuance of this act for the government of such vessels; and, before granting such certificate, such consular or medical officer is required to be satisfied that the statements therein made are true; and, upon the request of this board, the President of the United States is hereby authorized to appoint proper medical officers, to serve in the offices of the consuls at any such foreign port, to make the inspections and give the certificates herein required.

SECTION 5. Such vessels shall observe all rules and regulations made by this board, in pursuance of this act, in regard to the inspection, disinfection, and isolation of the same, upon its arrival at any port in the United States, and for the treatment of persons and cargo on board, so as to prevent the introduction of contagious diseases into the United States, and it shall be unlawful for any vessel to enter such port, to land its passengers, or discharge its cargo, except upon a certificate, from the health officer of such port, that such rules and regulations have in all respects been complied with.

SECTION 6. In the event of any sudden emergency, threatening the importation of contagious or infectious disease into the United States from any foreign country, the President of the United States is hereby authorized and required, in his discretion, to adopt and make known forthwith by public proclamation, such measures as may meet the emergency, either by suspending the introduction into the United States, by land or sea, of any specified merchandise calculated to be a vehicle for the communication of contagion, or by prohibiting the entry into the ports of the United States of vessels coming from infected countries or having contagious or infectious disease on board. And in case the President shall at any time exercise the authority hereby conferred upon him, he shall, at or before the time of issuing such proclamation as aforesaid, convene the

National Board of Health, to meet at Washington in special session within ten days from the date of such notice of convention, and the said board shall thereupon advise such measures as it may deem sufficient to meet the emergency; and, upon the taking effect of such measures, with the approval of the President of the United States as herein provided, the President's proclamation aforesaid shall cease to have effect. It shall be the duty of this board at all times to give prompt attention to any question in sanitary science which may be submitted to it by the President.

SECTION 7. It shall be the duty of the Department of State to obtain, from the consular officers at foreign ports or places, all available information in regard to the sanitary condition of such ports and places, and to transmit the same to this board; and it shall be the duty of this board to obtain from the State and municipal health authorities throughout the United States, and from all other available sources, weekly reports of the sanitary condition of ports and places within the United States, and reports and other matters relating to climatic and other conditions affecting the public health, and it shall prepare, publish, and transmit to State and other authorities, and other proper persons, weekly abstracts of such reports, consular reports, and other useful information relating to the public health; and it shall make to the President, for transmission to Congress, an annual report of its transactions, with such recommendations as it may deem important to the public health; and the necessary printing of the board shall be done at the Government Printing Office, upon the requisition of the secretary of such board, in the same manner, and subject to the same provisions, as other public printing for the several departments of the Government.

SECTION 8. The President of the United States is authorized, when requested by this board, and when the same can be done without prejudice to the public service, to detail officers from the several departments of the Government, for temporary duty, to act under the direction of this board in carrying out the provisions of this act, and such officers shall receive no additional compensation, except for actual and necessary expenses incurred in the performance of such duties.

SECTION 9. To meet the expenses incurred in carrying out the provisions of this act, the sum of \$500,000, or so much thereof as may be necessary, is hereby appropriated, to be disbursed under the direction of the board; and the board shall have authority to appoint such disbursing agents as it deems necessary, who shall give bond, as in other cases, for the faithful performance of their duties.

SECTION 10. All acts and parts of acts in conflict with any of the provisions of this act shall be, and are hereby, repealed.

OBITUARY RECORD.—FREDERICK AKBAR MAHOMED, M.B., F.R.C.P., died at his residence, in London, on November 22, of typhoid fever. Dr. Maahomed was the author of a large number of contributions, to journals and societies, on medical subjects, some of the most valuable being on questions relating to kidney diseases, especially Bright's. He has held several hospital positions. He was in the thirty-sixth year of his age when he died.

#### NOTES AND QUERIES.

##### TESTING VALVULAR INSUFFICIENCY.

To the Editor of THE MEDICAL NEWS.

SIR: Will you kindly allow me to make a criticism upon Dr. Meigs's method of testing the sufficiency of the mitral and tricuspid valves, as detailed in THE MEDICAL NEWS of November 15th? Allowing, as we must, that the method in vogue is an unsatisfactory one, yet is there not danger of doing more harm than good by Dr. Meigs's plan of washing out the ventricles and removing clots before an incision has been made into them? One certainly runs the risk of tearing off parietal or valvular thrombi, or even vegetations, by such means, before one has had an opportunity of examining with the eye the lower surface of the aortic cusps and the inner walls of the ventricles.

Moreover, as it is in connection with cases of suspected heart disease that Dr. Meigs has felt especially dissatisfied with the old method, should not one take pains under such circumstances *not* to disturb the cavities of the heart (beyond an incision) until an ocular examination has been made? There is certainly room for improvement over the method of examining the heart as taught by Virchow and his pupils, but at the present time his method is apparently the best.

W. W. GANNETT, M.D.,  
Assistant in Pathological Anatomy,  
Harvard Medical School.

110 BOYLSTON ST., BOSTON, Dec. 7, 1884.

#### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 9 TO DECEMBER 15, 1884.

HAMMOND, JOHN F., *Colonel and Surgeon*.—Retired from active service, by operation of law, on December 7, 1884, under provisions of Act of Congress approved June 30, 1882.—S. O. 267, A. G. O., December 8, 1884.

MCKEE, J. C., *Major and Surgeon*.—Leave of absence still further extended one month.—S. O. 288, A. G. O., December 9, 1884.

LAUDERDALE, JOHN V., *Captain and Assistant Surgeon* (Fort Sully, Dakota Territory).—Granted leave of absence for one month, to take effect about December 20, 1884.—S. O. 146, *Department of Dakota*, December 9, 1884.

COMEYVS, E. T., *Captain and Assistant Surgeon*.—Granted leave of absence for one month.—S. O. 234, *Department of Missouri*, December 26, 1884.

PORTER, JOSEPH Y., *Captain and Assistant Surgeon*.—Sick leave of absence extended four months, on surgeon's certificate of disability.—S. O. 286, A. G. O., December 6, 1884.

KANE, JOHN J., *Captain and Assistant Surgeon*.—From Department of the East to Willett's Point, New York.—S. O. 286, A. G. O., December 6, 1884.

BANISTER, J. M., *Captain and Assistant Surgeon* (Fort Adams, Rhode Island).—Granted one month's leave of absence, on surgeon's certificate of disability.—S. O. 251, *Department of the East*, December 9, 1884.

PILCHER, JAMES E., *First Lieutenant and Assistant Surgeon*.—Ordered to Fort Custer, Montana Territory, for duty. Order assigning him to duty at Fort Abraham Lincoln, Dakota Territory, amended.—S. O. 145, *Department of Dakota*, December 8, 1884.

GRAY, CHARLES C., *Major* (retired).—Died at Geneva, New York, November 22, 1884, instead of November 26th, as heretofore announced.—*Circular Orders*, A. G. O., December 8, 1884.

THE MEDICAL NEWS will be pleased to receive early intelligence of local events of general medical interest, or of matters which it is desirable to bring to the notice of the profession.

Local papers containing reports or news items should be marked.

Letters, whether written for publication or private information, must be authenticated by the names and addresses of their writers—of course not necessarily for publication.

All communications relating to the editorial department of the NEWS should be addressed to No. 1005 Walnut Street, Philadelphia.